

RAILWAY AGE

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The largest Diesel Repair Shop on its entire system was recently completed at Chattanooga, Tennessee, by the Southern Railway Company. The Engineering Department has been a long-time, extensive user of wrought iron to combat maintenance in corrosive applications, and followed the same sound practice here. Byers Wrought Iron pipe, in a range of sizes from 1/2-inch to 8-inch, was installed for underground Diesel oil lines, re-

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Practically every major railroad today is faced with the necessity of building entirely new facilities for repairing Diesel locomotives. Here, as in almost all railroad applications, the cost and consequences of any failure goes far beyond the mere expense of the repair, so that dependability and durability is a definite must. In most cases, the individual records of each road will provide ample evidence of the staying qualities of wrought iron pipe—and provide the best possible guide in specification for an enduring, low-cost-per-year installation.

The unusual properties of wrought iron come direct from the unusual character of the material. Tiny threads of glass-like silicate slag distributed through the body of high-purity iron, halt and disperse corrosive attack, and so discourage pitting. The fibers also anchor the initial protective scale, which shields the underlying metal.

If you would like specific information on the suitability of wrought iron for any particular application, one of our representatives will be glad to provide it. For a general picture of the manufacture, characteristics and use of wrought iron, ask for the booklet, **THE ABC'S OF WROUGHT IRON**.

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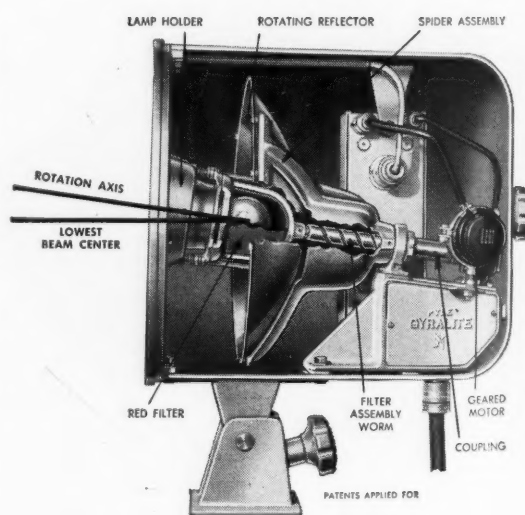
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IN THIS ISSUE

EDITORIALS:

- On Getting Ready for the 5-Day Week 27
How Important Is Safety to the Engine Unions 29

NEW BOOK 37

COMMUNICATIONS 47

GENERAL NEWS 51

FREIGHT OPERATING STATISTICS 70

CURRENT PUBLICATIONS 83

GENERAL ARTICLES:

- New Lines — for More Coal 30
"De-Regulation" of American Railroads, by
Robert B. McColl 34
Refueling Diesel Switchers at Work 36
Virginian's New Electrics Meet All Requirements,
by Jack Hauso 38
Brotherhoods Seek 40-Hour Week for Yardmen 44
Railway Centennial in Spain 45
The Public Pays for "Log-Rolling" 46
New and Improved Products of the Manufacturers.. 48
Diesel Service in a Steel Plant 50

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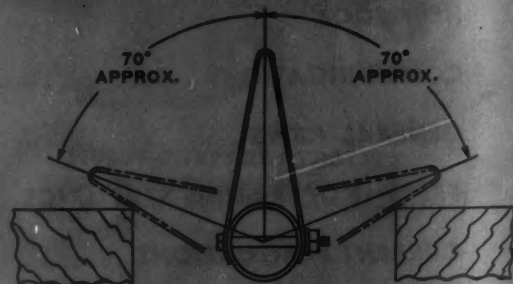
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WEEK AT A GLANCE

MORE DEMANDS FOR LESS WORK: Now the conductors' and trainmen's brotherhoods are telling the railroads that men in yard service performing the duties of those occupations must be put on a 40-hour week. Together with these demands are a lot more which are detailed in the article on page 44, along with the carriers' counter-proposals for a more realistic definition of fundamentals.

VIRGINIAN ELECTRICS: Finding itself short of motive power to handle increasing traffic over its 14-mile 2 per cent Allegheny mountain grade, the Virginian last year acquired four more electric locomotives. These 6,000-hp. General Electric motor-generator type products work efficiently in the same trains with the older split-phase type in service on that road for a quarter of a century. A completely illustrated description of the new locomotives appears herein (page 38).

ACTIONS SPEAK LOUDER—: The superior opportunity to enjoy the scenery afforded enginemen riding Diesels is so appreciated by the engineers' union that it is exhausting every device to force the railroads to put two engineers on road Diesels. One of these devices has been advertising, directed to the general public, which seeks to put over the pious idea that the brothers' only interest is in *safety*—something (you are supposed to believe) the stingy, plutocrat-piloted railroads never spend a nickel for. For some reason, however, the union ads fail to explain just how it happens that their zeal for safety impels them to insist that the "dead-man" pedals in Diesel cabs be disconnected after the railroads go to the expense of installing them. This interesting anomaly is explored in one of this issue's editorials.

MAJOR UPHEAVAL: What the forty-hour, five-day week adds up to in jobs that have to be filled and work that has to be done, come Saturday, Sunday or holiday, if a railroad is to run and give the service its customers properly expect of it—this is the subject of a comprehensive analysis in this week's leading editorial. A man-sized task of adjustment faces railroad managements, and troubles can develop if they do not seek and receive the cooperation of shippers and employees in the transition period.

DISCRIMINATION: Evidence is accumulating that owners of private automobiles and ordinary taxpayers are waking up slowly to the fact that they are paying the freight for the operators of behemoth trucks who claim it "costs" less to haul freight over the road. In the state of Washington, we report this week (page 46), a study is being circulated which shows that maintenance costs \$1,320 annually per mile for highways used for the movement of logs that formerly went by rail. Maintenance of comparable roads used by general traffic costs \$518 per mile annually. The public pays the

difference, of course, to the advantage of a few specially privileged shippers.

REFUELING WHILE WORKING: Rather than have its Diesel-electric switchers use hours of working time running back to engine terminals to take on fuel and sand, the Pennsylvania has installed a fleet of highly maneuverable motor trucks to carry these supplies to the locomotives' regular working locations. A short article on page 36 explains the operation and the construction of the trucks.

SHOCKING TO BUREAUCRATS: If the Washington hospitals are overflowing, apoplectically attacked anti-trust division lawyers could be the cause. While they labor relentlessly to make it ever more difficult for private enterprise to survive, the suggestion is being made—publicly—that there should be *less* regulation of railroads, a suggestion expressed with exceptional logic and persuasiveness this week by Alco's President McColl. His argument is briefed on page 34.

NEW ATTITUDE NEEDED: The whole theory of regulation of railroads is based on what Mr. McColl pertinently calls Nineteenth century thinking—on the premise that the railroads have now—in this era of trucks and buses and air lines and pipe lines—a *monopoly* of transportation. Twentieth century conditions must be met with Twentieth century thinking, he argues. A "competitive approach" to railroad problems, the basic formula for which he outlines, can supply the element now missing; that is, opportunity to employ managerial skill to perform the railroads' national obligations in the most efficient way. That way would be *profitable*, and with a fair chance to make a profit capital once more would be attracted to the railroads—capital without which they cannot continue to thrive.

MORE LINES FOR MORE BUSINESS: When a railroad builds 60 miles of new line these days it's news. Such news is reported in the article (page 30) describing extensions and yard improvements built and building by the Chesapeake & Ohio—at a cost of \$15.5 million—to tap new coal fields and accelerate the movement of trains.

NOTED IN THE NEWS: Doubts that "basing point" pricing methods can be used legally—unless Congress takes some positive action—are reinforced by another non-clarifying Supreme Court order. . . . The Pennsylvania's newly equipped "Liberty Limited" began running this week. . . . More than 17,000 box cars are lined up in the West ready for the flood of wheat (last year's crop) expected to go to market next week when government loans run out.

6

POINTS TO REMEMBER WHEN CHOOSING

EXTRA LONG LIFE. EDISON batteries outlast all others in railroad service. When they finally complete their service life in heavy-duty air conditioning, regroup the cells and get a *second life* in lighter-duty service.

DEPENDABILITY. The name EDISON has been synonymous with dependability for over half a century. EDISON cells provide the closest approach to failure-free standby power known. They won't quit unexpectedly and are easily maintained.

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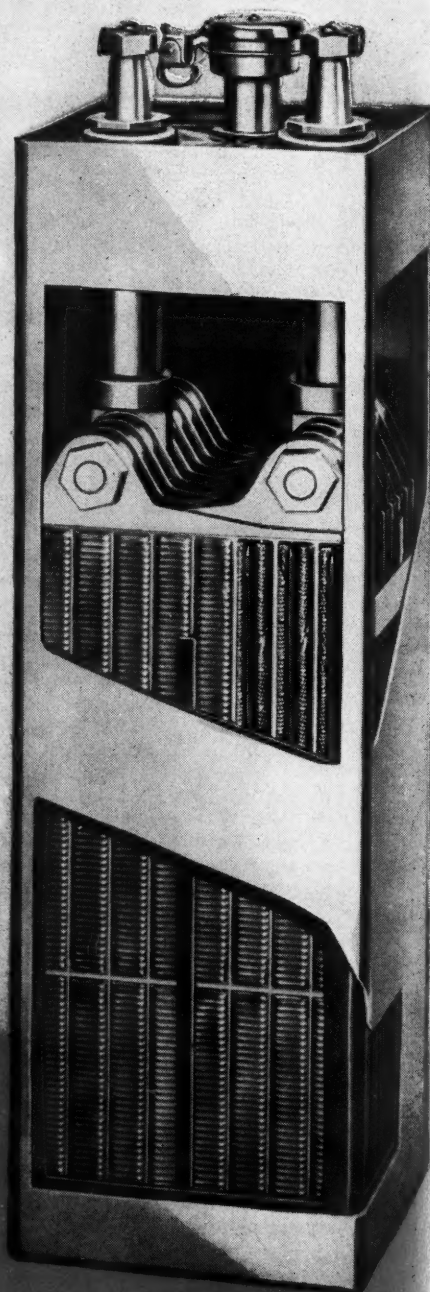
STEEL CONSTRUCTION. All EDISON cell containers, pole pieces, grids—even the tubes and pockets containing active materials—are made of rugged steel. The alkaline electrolyte is a recognized preservative of steel.

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NICKEL-IRON-ALKALINE PRINCIPLE. This original EDISON principle is chemically foolproof, electrically trouble-free. For these reasons it is the basis for long life, dependability and overall economy in EDISON batteries.

Cutaway view of A8H Edison cell at right illustrates its all-steel construction, including the tubular positive plates.

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ON GETTING READY FOR THE 5-DAY WEEK

On the railroads, September 1 will be "F-Day" (*Forty-Hour, Five-Day-Week Day*). It will usher in a revolution in operating practices, wage rates and methods of serving the public. The all-important job before managements is, by careful study and planning, to contrive to secure whatever benefits they can from the innovation, while avoiding as many of the adverse effects as possible. Unity of action among the railroads will be of the greatest help to them in attaining these goals, because, to the extent that changes in railroad practices to meet the new conditions are made uniform, there will be less occasion for dissatisfaction on the part of the customers, and there should be less difficulty in negotiations for agreements by the individual railroads with the unions. The competition of other types of carriers is, of course, a consideration of primary importance in making the changes in practice required by the new regime.

New Tools Will Help

Searching analysis of every job affected by the agreement—disregarding tradition and habit—may reveal ways to compress work into a five-day week which, without such study, is sure to appear impossible. Besides cutting corners by changes in working procedures, there is equally hopeful opportunity for applying and adapting modern tools to all jobs in which they can provide an effective substitute

for expensive man-hours. Necessity is said to be the mother of invention—and there has never been a more appropriate time on the railroads to make that observation come true.

People outside the railroad business may say: "What are the railroads complaining about anyhow? Almost every other large industry has absorbed the 40-hour week without folding up." This observation fails to take account of the fact that the railroads cannot, like a factory, close down at midnight Friday until 8 a.m. Monday—although more of their operations might be suspended for a day or two a week than may be suspected without critical scrutiny. For the most part, however, they will have to keep going continuously as heretofore. Many of the so-called non-operating employees covered by the 40-hour-week agreement are actually in the operating department, performing work of the same continuous kind as that of employees in train and engine service. There are, for example, about 4,400 men employed in marine operations by the railroads in New York harbor—to all or most of whom the 40-hr. week will be applied, despite the fact that their work necessarily is as continuous as the operation of trains. In fact, one large road serving the harbor floats more freight cars on Sundays, and considerably more on Saturdays, than on any other day of the week.

The 40-hour week was established in most other industries by the so-called Fair Labor Standards

Act at a time of widespread unemployment, when few industrial employees were working more than 40 hours anyhow. In fact, average weekly hours worked by production employees in 1938, just prior to the effective date of the act, were only 35½. Adaptation of industry's practices to conform to the 40-hour limitation was further simplified by its gradual introduction—that is, hours were reduced to 44 in a "first bite" in October, 1938; to 42 hours the next year; and to 40 hours in October, 1940. By contrast, the work-week of almost one million non-operating railroad employees will be cut from 48 hours to 40 in one single swoop on September 1. And this limitation will have to be accomplished at a time of relatively high employment, when there are not many skilled workers available who do not have jobs already.

Added Obligations

Had the original demands of the unions—48 hours' pay for 40 hours' work, punitive overtime on week-ends, and a 25-cents-an-hour increase in addition—been granted, the added cost to the railroads would have been about \$1.5 billion annually. By rejection of punitive rates for Saturday and Sunday, and shaving the additional hourly increase from 25 cents to 7 cents an hour, the estimated additional expense has been reduced to about \$640,000,000 a year—based upon the November, 1948, level of employment. A decline in the number of employees in some classes has since occurred—but this has been accompanied by an even greater relative decline in traffic, so that the railroads' ability to absorb the increased expense of the shortened week has been weakened rather than strengthened.

Under the new agreement with the unions, the railroads have a distinct obligation to provide a work-week with two consecutive days off. In dealing with any special situation which may make this impossible, the roads must adhere among other things to the clause which declares that "the least desirable solution of the problem would be to work some regular employees on the sixth or seventh days at overtime rates, and thus withhold work from additional relief men."

The extent of the hiring and training job which confronts the industry, in view of this stipulation, is indicated with reasonable accuracy in evidence submitted to the Emergency Board which decided the dispute*. Based upon the number of employees in the first half of 1948, this evidence indicated that all of the 947,679 employees covered by the agreement worked at least a 5½-day week and were paid on the basis of at least six days—hence no position automatically adjusts itself to the 40-hr. week. Either (1) every job must be compressed into five days by getting more work done in less time

(by greater efficiency, mechanization, or the hiring of additional employees), or (2) relief employees must be utilized on the sixth and/or seventh day. A total of 267,699, or 28.2 per cent, of the employees covered were assigned to seven-day positions, almost none of which can be compressed into five days and which, therefore, must be accorded relief or overtime on two days of each week.

Examining these jobs further, and excluding yardmasters and dining car employees (for whom benefits other than a straight 40-hr. week are provided), it is evident that the impact of the new work-week will fall with widely varying force on the different departments. Hardest hit will be those with a preponderance of seven-day jobs, which, generally, are concerned with train operation and, hence, are usually not "compressible."

Many of the present individual-road agreements covering these jobs provide for relief on the seventh day, but, because of a shortage of trained personnel during the war and postwar period, a large number of these employees have actually been working seven days, receiving overtime rates on the seventh day.

Effective September 1, relief employees must be found for many of these positions for *two* days and, for the remainder, their regular incumbents will be paid overtime for two days a week. Employees assigned to present 5½- or 6-day jobs which, the carriers estimated, could be compressed into five-day week jobs totaled 471,374 last year, or approximately 50 per cent of total "non-ops."

How Many More Men?

Even though the work on these jobs can be done in five days, if the same number of man-hours were to be required to produce the work now performed, the railroads would have to hire additional people, because, while the work would be encompassed within a five-day week, the present work-load could not be accomplished without putting more employees on the job on the days when work is done. The railroads would for this reason have to hire an estimated 83,761 additional employees, or an increase of about 9 per cent over last year's "non-op" roster, except as increased efficiency might make possible some reduction.

This total of 83,761 employees (as of the first half of 1948) would have to be added to the payroll in "compressible" jobs alone unless management devises a means of increasing output per employee. There is good evidence that the latter aim will be accomplished and that the number of employees actually added on September 1 will bear little resemblance to the theoretical estimates. There were, in addition, as of last year, 227,051 5½- and 6-day jobs which cannot be telescoped into five days, and for which relief assignments must be made for one day each week.

* Carriers' exhibit No. 11, "Classification of Positions by Work-week Requirements."

The job of adapting the railroad business to a 40-hr. week will bring to light the fact that many jobs which, on first glance, seem immediately "compressible" are in fact so intimately related to operations as to require drastic changes in routine. Even off-line traffic forces, for example, now render customers such Saturday services as tracing, special handling, rate quotations and the distribution of emergency tariff supplements. How far can the railroads go in eliminating them? State laws are drastic in requiring the speedy payment of wages. Can payroll staffs eliminate Saturday work? The laws of many states require that freight and passenger stations be manned during the business hours of each business day; some demand attendance before and during the stops of scheduled passenger trains.

On one large road 56 per cent of the employees in the locomotive and car departments hold jobs which have to do with servicing, light repairs and inspections and must remain on a seven-day basis. While as many as 90 per cent of industries on sidetracks in certain localities do not now require Saturday switching, what effect will an effort to curtail industrial switching to five days have on yard capacities and road operations?

To these and a thousand other considerations the individual managements must address themselves during the next few months. The 40-hr. week will require the rewriting of practically every one of the more than 1,500 major wage and rules agreements applicable to non-operating employees on the Class I roads, not including hundreds of local and special agreements. Not only must the railroads be protected against unwarranted labor costs, but in the field of competitive service as well. What the managements are able to accomplish by September 1 and the degree of cooperation they receive from their employees and patrons will largely determine whether a major revolution in railroading is to be carried out successfully, or turn out to be something perilously close to disaster.

Throughout the years the size of cars and locomotives has been increased as rapidly as track could be strengthened to carry the heavier loads. However, management always held the two component parts of the railway plant in balance and would not allow heavier axle loads to move over track that was not fit to carry them. A condition sometimes imposed in order to introduce heavier locomotives was to run them slowly over bridges and track not fully up to standard. This is in striking contrast to the destruction of billions of dollars of public highway by operating too heavy trucks over them at too high speeds. This destruction is caused by the very trucks which we are often told are pricing the railroads out of business.

—Ralph Budd, president of the Burlington, at a meeting of the Chicago Association of Commerce & Industry

HOW IMPORTANT IS SAFETY TO THE ENGINE UNIONS?

Safety considerations have been used repeatedly by the railroad brotherhoods as arguments in their attempts to increase the number of "make-work" jobs. With this technique they have been singularly successful, because neither managements nor neutral boards care to go out on a limb by insisting that labor-saving practices are safe when, by the greatest stretch of imagination, they might conceivably bring about an accident. The fact is, however, that, for all their insistence on maximum safety, the brotherhoods have often been reluctant to accept safety devices—some of them very costly ones—which the carriers have willingly provided. One such device on a majority of Diesel-electric locomotives is the "dead-man's control," which automatically applies the brakes if the engineer releases his weight from a foot pedal in front of his seat in the cab. This added protection has met with the disfavor of the engine service organizations because operation of the control is said to be inconvenient for the engineer.

The Brotherhood of Locomotive Engineers revealed its curious inconsistency in some hastily prepared evidence before the emergency board which recently heard — and recommended against — the union's demand that an additional engineer be assigned to Diesel locomotives. First Assistant Grand Chief Engineer J. P. Shields testified on February 21 concerning a fatal head-on collision of a Diesel-powered train. After outlining the details of the accident, Mr. Shields concluded that the wreck was due to a "manpower failure," suggesting that the engineer had fainted, or died, prior to the collision; that the head brakeman was in the cab, but was looking back along the train when the engine passed a yellow, and later, a red block signal; and that the fireman was in the rear of the three units comprising the locomotive.

Mr. Shields stated also that "there was no dead-man's pedal on this locomotive," but that "had there been one, experience has taught that an engineer *may* faint or even die without removing the pressure of his foot from that pedal (emphasis added)." Mr. Shields did not explain that, when the locomotive was placed in service, it was equipped with a dead-man's pedal, but it had been disconnected as a result of continued insistence by union representatives.

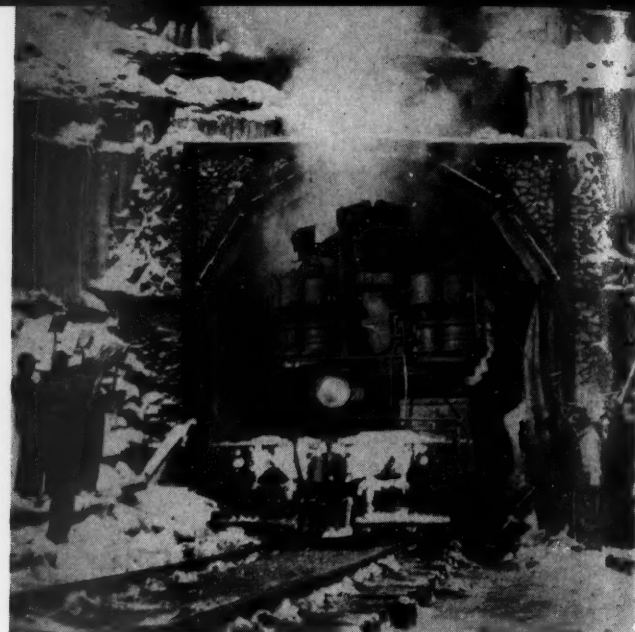
How much credit for sincere concern over safety can be ascribed to a union which lays claim to this motive in its plea for a second engineer on Diesels—but which has rejected a time-tested device for securing alertness on the part of the engineer in charge of a train? It is perfectly clear, in this instance, that an additional engineer—or fireman, or shop craft employee—in the engine room of this locomotive would have contributed nothing toward preventing this fatal collision—he would merely have been an added casualty.

NEW LINES -- For More Coal

Chesapeake & Ohio extends mine branches into new fields containing an estimated 900,000,000 tons of high-grade fuel, and enlarges yard facilities to handle additional traffic

To permit expansion of mining operations in the bituminous coal fields of eastern Kentucky, southwest Virginia and the southern part of West Virginia and, in consequence to develop additional traffic, the Chesapeake & Ohio is currently engaged in a \$15,500,000 program involving the construction of four new coal mine feeder lines in this territory, totaling 60.1 mi. in length. Two of these lines are already in service. In addition, the road spent \$1,250,000 to improve and enlarge its yard facilities at Shelby, Ky., on its Big Sandy district, and is currently engaged in spending another \$5,070,000 for improvements at its important main-line terminal at Russell, Ky., to handle the increased traffic that will result from the new coal operations.

The new feeder lines include one in West Virginia,



Above—One of the first trains to use the Pine Mountain tunnel on the Jenkins extension. This line is expected to develop an area containing 300,000,000 tons of recoverable coal. Facing page—This terrain is fairly typical of that encountered on all four of the new lines

two in Kentucky, and one which extends from a point in Kentucky across the state line into Virginia. The new line in West Virginia is a 5.93-mi. extension of the Trace Fork subdivision, beginning near Holden, W. Va., and extending southwest into Mingo county. This line will permit the development of an area estimated to contain 50,000,000 tons of recoverable coal, largely controlled by the Island Creek Coal Company. The cost of the line, which includes a 2,875-ft. tunnel, is estimated at \$2,500,000. Work was begun on this project last spring and it was placed in service last week.

New Lines in Kentucky

The longer of the two lines wholly within Kentucky is the Wayland extension of the Elkhorn & Beaver

Left—A Link-Belt Speeder shovel loading a Euclid truck in grading for one of the new lines



Left—An installation of an Armco Multi-Plate pipe culvert on the Wayland extension

Facing page—Looking over part of Shelby yard, showing the new enginehouse, under construction, at the left. The main yard (in the background) extends behind the rocky knoll at the right, upper center



Valley subdivision. This line originates near Wayland and extends generally southward for 22.5 mi. to a new mine of the Consolidation Coal Company. Coal deposits in the area served by this line are estimated at 200,000,000 tons and it is expected that production will amount to 1,500,000 tons by 1952, increasing to 2,000,000 tons per year at the end of the next five years. This line, placed in service in September of last year, represents an expenditure of \$4,225,000.

The second of the two lines in Kentucky begins near Carver, the present end of the Dawkins subdivision, and will extend south and east 15.7 mi. to a point on Spring of Quicksand creek in Breathitt county. Recoverable coal deposits in this area are said to amount to 85,000,000 tons. Work on this line, which was begun only recently, will cost approximately \$4,500,000.

Already in service is a 14-mi. extension of the Jenkins subdivision, from Jenkins, Ky., the former terminal, across the state line into Virginia, terminating at a new tippie of the Clinchfield Coke Corporation near Pound.

Coal reserves in this field are estimated at 300,000,000 tons. The cost of this interstate line, which included a 3,622-ft. single-track tunnel, was approximately \$4,000,000.

All of these new lines are characterized by relatively heavy grades and curves, occasioned by the unusually rugged terrain in this mountainous district. The lines follow winding mountain streams through valleys with steep side slopes. Heavy earthwork is required at many locations, even to build the narrow shelf on which to locate the single-track roadways. Many deep cuts





This map shows the location of the four new coal branches (dotted lines) with respect to other C. & O. lines in this territory



Two viaducts were required on the Wayland extension

and high fills are necessary at other points to avoid long bows in following the winding water courses.

Operating Features

The Wayland, Dawkins and Jenkins extensions all feed into the main line of the C. & O.'s Big Sandy district, which extends east (timetable direction) from Catlettsburg, Ky., on the main east-west line of the system, to Elkhorn City, 128 mi. Loaded cars from mine runs on these and other lines in this territory are assembled at Paintsville and at Shelby, 60 mi. and 112 mi., respectively, from Catlettsburg, moving thereto on card bills. At Shelby the cars are made into solid trains and, still moving on card bills, are taken to Russell where they are classified and weighed and where waybills are prepared. Coal traffic from the Trace Fork extension enters the main line at Barboursville, W. Va., and it will also be weighed and classified at Russell.

During the war it became apparent that the yard facilities at both Shelby and Russell were being heavily taxed to handle the coal traffic of that period. A major improvement program was begun at those points to relieve this congestion and to handle the increased traffic that is expected to develop from the new feeder lines. The improvements at Shelby, now complete, are described later in this article; those at Russell will be described in a separate article to be published later.

Grade and Curvature

The physical characteristics of the Wayland and the Jenkins extensions, both of which are now in service, are, in general, typical of the new lines. Specifications called for a 20-ft. width of roadway to support a single track, this being widened, where necessary, to permit the construction of passing and storage tracks. The maximum grade on the Wayland line is 2 per cent, compensated, while that on the Jenkins extension is 1.5 per cent. Maximum curvature on the former is 12 deg.; on the latter it is 14 deg. On the Trace Fork extension, where more rugged terrain was encountered, the maximum grade was held to 2.2 per cent against loaded cars, and 3 per cent against empties. These lines are ballasted with gravel and laid with 100-lb. and 130-lb. rail on fully-plated, treated ties.

The Wayland extension follows a fork of Beaver creek from Wayland to Deane, crossing the stream at several points. Directly after leaving the old line at Wayland, the new line is on an embankment, parallel with the stream and between it and the community. The embankment thus serves as a dike to prevent the town from being flooded during periods of high water. Several pipe culverts in this fill permit storm water to be discharged into the stream. The outfall ends of these culverts are fitted with flap gates that close automatically when the creek rises, preventing water from backing up into the town.

Near the headwaters of the creek the terrain becomes increasingly rugged, which required several heavy cuts and high fills. One cut is approximately 200 ft. deep—most of the excavation having been in rock. One fill is this territory is 150 ft. high.

Near Deane are two major bridge structures which

carry the line across deep ravines. Each is a deck-girder viaduct with supporting towers founded on concrete pedestals. One of the viaducts—crossing a stream known as West Fork—is 156 ft. above the stream bed, while the other—over Arnold Fork—is 176 ft. above the stream and is the highest structure on the C. & O. The original design of these structures called for each to be 700 ft. long to effect economies in fabrication and erection. However, a pocket of unstable material was encountered at the east end of one viaduct and it was necessary to extend this viaduct an additional 148 ft. by adding two deck-girder spans. Both were built by the Virginia Bridge & Iron Co., Roanoke, Va.

Troublesome Tunnel

From a construction standpoint the principal feature of the Jenkins extension is a 3,622-ft. tunnel through Pine mountain, by means of which the line passes from Kentucky into Virginia. Considerable difficulty was encountered near the Kentucky end of this tunnel from highly unstable material. This material exerted both lateral and downward thrusts on the tunnel lining, which induced also an upward pressure. To overcome these forces, the west 858 ft. of the bore was lined with reinforced concrete. In addition, the floor of this section was concreted, being reinforced with a grillage of steel rails to counteract the upward pressure. The remaining length of tunnel was lined with timber. The Western Construction Company, Sioux City, Iowa, held the tunnel contract.

Grading on this line involved about 2,000,000 cu. yd. of material. The largest cut is 90 ft. deep and 750 ft. long.

Changes at Shelby Yard

The improvements at Shelby yard, carried out at a cost of \$1,250,000, were designed to increase its car capacity and thus enable it to handle the additional traffic anticipated from the Dawkins, Wayland and Jenkins extensions. Prior to the recent work, this yard had ten tracks, with room for 623 cars. These tracks were extended eastward to increase capacity to 1,090 cars. Other improvements at this point included a new employees' dormitory, the complete revision of the car-repair yard, and the rearrangement of the engine terminal, including a new enginehouse and a new machine shop.

The terrain at Shelby did not lend itself readily to any scheme proposed for improving the existing layout. The railroad at this point follows the south bank of Levisa Fork of the Big Sandy river, which lies in a narrow valley with steep side slopes. Directly at Shelby the river curves sharply and the valley widens sufficiently on the inside, or south side, of the curve to accommodate the main track and the former yard tracks.

Lateral Expansion Impractical

Directly south of the old yard layout, and of almost the same length, is a rocky island-like knoll on which are located most of the dwellings and other structures which comprise the community of Shelby, while south of this knoll is a narrow draw in which the engine terminal and car repair yard are located. These service

facilities are connected to the east and west ends of the yard, thus surrounding the knoll with trackage.

Lateral expansion of the yard proper was prevented by the knoll on one side and the river on the other, while longitudinal extension of the tracks to the west was impractical because of the presence of a stream, 100 ft. wide, directly west of the yard. The only practical solution lay in extending the yard to the east—a project that called for much heavy grading in providing a shelf on the mountainside wide enough to accommodate the extended tracks.

The tracks were lengthened various amounts ranging from 970 ft. to 1,850 ft. The excavated material from the hill side of the tracks was used to widen the embankment on the river side. The main track was then shifted toward the river to provide additional room for extending the yard tracks.

This project also called for retiring the existing passenger station, the yard office, a restaurant, and a dormitory for train crews—all but the last of which were in the area to be occupied by the enlarged yard. The station was moved to a former dwelling on the west bank of the creek at the west end of the yard, while the other facilities were relocated in new buildings constructed near the west end of the yard.

Engine Terminal Changes

The layout of tracks at the existing engine terminal required several reverse movements in servicing locomotives, and conflicting movements occurred frequently. The new layout eliminates these objectionable features. In addition, this phase of the project includes a three-stall enginehouse and three outside radial storage tracks which replace the former enginehouse—a single-track through-type building. The new house is served by a new 130-ft. turntable. Supplementing the enginehouse is a new machine shop directly adjacent to it. Other new features in the terminal area are a 135-ft. inspection pit, additional ash-handling equipment and a new engine-washing platform.

Changes at the car repair yard included a revised track arrangement to improve switching operations at the yard, two new stub-end repair tracks, with an eight-foot concrete platform, 610 ft. long, between them, and a new shop building.

Under the new arrangement, Shelby yard is handling about 1,200 cars daily, compared with 200 cars in the period immediately prior to the war. The potential capacity is considered to be well above this figure.

The various improvements described were carried out under the general directions of L. T. Nuckols, chief engineer, Richmond, Va. The Trace Fork extension is being constructed under the supervision of H. S. Purdom, district engineer, Huntington, W. Va., while the Dawkins extension is being made under the supervision of G. R. Jenkins, district engineer at Pikeville, Ky. The improvements at Shelby yard and the construction of the Wayland and Jenkins extensions were also under the direction of Mr. Jenkins.

In conjunction with these line extensions and yard improvements, the C. & O. has installed new centralized traffic control or automatic block signaling continuously throughout its Big Sandy district. This signaling work was described in an article in *Railway Age* of February 19.

"DE-REGULATION" OF AMERICAN RAILROADS

"It is time to start some Twentieth century thinking"

By **ROBERT B. McCOLL**
President
American Locomotive Company

The refusal of the American people to risk their savings in any company or industry is not evidence that they are either foolish or anti-social. It is simply evidence that a basic situation isn't right and needs to be fixed. Risk capital will be attracted to any industry—and create jobs and security—when earnings, dividends and prospects are good.

When railroad stocks are selling at two times earnings—as some of them are; when railroad bonds are selling to yield 10 per cent in spite of large coverage; when whole railroads are priced in the market at less than their cash and rolling stock—so that plant is being thrown in free—a fundamental situation needs fixing.

I would like to suggest that we first have *a job to do with people*—that we have first and foremost a human problem.

Where the Answer Lies

I certainly agree with all who say that we want a sympathetic understanding on the part of the American people. But I think that we cannot count on the general public to rise up and solve our problems for us—or even to take time out from their busy lives to study the railroad situation.

I would like to suggest that the answer lies much closer to home. There are in this country today about 1,300,000 men and women who are employees of America's railroads and who have at least as great a stake in the growth, survival, vigor and security of the railroad industry as any other group in the country. After all, 60 per cent of the costs of operating a railroad are wages. Furthermore, these men and women are organized and vocal.

In addition, there are 900,000 stockholders and 1,000,000 bondholders who have an equally important stake in the welfare of the railroads. It has never seemed possible to organize shareholders behind industrial projects, but we must not underestimate their potentialities.

And there are other groups which can certainly help in any program. Shippers and suppliers have a substantial stake in the survival and progress of our railroads. Certainly all of us in the railroad equipment industry have a big stake in a sound and prosperous railroad industry.

If we are to have the help of large groups of people,

we must have objectives important to them. I think we have such aims for employees, for security holders and for all associated with American railroads—

First, greater security; second, better earnings; third, greater opportunity for growth and advancement.

But these things can be achieved only by giving customers of the railroads faster and better service at lower costs—because if we do not first take care of the customer in face of hard competition from trucks, buses, planes, water transportation and pipelines, we can't take care of employees or anyone else. Our aim must be to give investors a strong, solvent, prosperous, *dividend-paying* railroad industry—one that is attractive to risk capital—because if we don't attract money, we can't have modernization and low costs; we can't compete successfully with other forms of transportation; we can't get the business; and, employees cannot have security, good earnings and opportunity. The basis for security for all must be a dynamic, strong, aggressive, forward-looking industry.

I see no reason, on the basis of experience in England, for any American employee to believe that nationalization can have a good and beneficial effect for him. In fact, the assumption seems to me stronger than ever that nationalization is essentially for the desperate—and cannot be justified except in desperation. It is a form of receivership.

At the same time, it is quite evident that large numbers of people believe that our own system needs to progress—which, I believe, is exactly what it is doing. We are now being asked to gear our profit system to the achievement of additional objectives.

It is my own feeling, of course, that only our dynamic enterprising system can achieve the great goals the American people are setting. It is my own conviction that nationalization and regulation lack the living spark. They will never get the results they promise. They lack creative force.

The industries of England have nationalization today because they did not keep their private enterprise house in order. They did not provide machines to increase the productivity of the worker. They turned to cheap labor instead of helping the worker to earn more by producing more. Now there is no cheap labor and the industries have had to go "through the wringer" of nationalization because they couldn't compete. They haven't got the money and they have no way of getting it—except through government. It is by no means certain they will get it that way either.

It seems to me all the evidence points one way. The

Condensed from an address at a meeting in Chicago April 27 of the American Society of Mechanical Engineers.

free enterprise system is vigorous, dynamic, constructive and can do more for employees than any other. It has created a tremendous productive force. It has sometime been shortsighted. But the socialistic system has yet shown no evidence that it can do as well in this regard and provide the drive necessary to build a dynamic social system, or even to run a going concern successfully over a period of time.

I think instead of talking about nationalization, the time may be ripe to talk about *de-nationalizing the railroads* of this country—about *de-regulating* them.

If we can show the 1,300,000 employees and 1,900,000 investors of U. S. railroads that *de-regulation* is the road to greater security, greater earnings and greater opportunity for them, I believe the American people are today fully prepared to accept such a course.

Regulation of American railroads, as we all know, came out of Nineteenth century public opinion. *I believe it is time to start some Twentieth century thinking.*

No Transportation Monopoly

Railroad regulators were attempting to defend the American people against a transportation monopoly. In a democracy when anyone begins to get a monopoly, he can be certain he's going to get regulation with it. But the Nineteenth century idea of railroads is as out-of-date as the fancy Pullman cars of that period. The railroads of this country no longer have a transportation monopoly—far from it. They were never in a more competitive market than they are today.

I need not tell you what a stimulating effect progressive de-regulation of railroads might have, not only in this country, but throughout the world. For America to turn away from regulation would be a tremendous stimulant to freedom-loving people everywhere. It would be a reaffirmation of the American belief in the individual if we were to start *de-socializing* our railroads.

What are some of the steps by which we can begin to approach our goals of greater security, earnings and opportunity for all associated with the railroads, and better, faster, lower-cost service for the customer?

1. A realistic system of depreciation for railroads.

I believe the current system is entirely inadequate. Railroads are being asked to buy \$4,000 box cars out of depreciation on \$2,000 box cars. It can't be done. We need a reconsideration of the theory of depreciation based on original cost.

Actually the \$4,000 box car costs considerably more because the money has to come out of earnings after taxes amounting to about 38 per cent.

Furthermore, depreciation rates are unrealistic. We are in a fast-moving atomic world. We often have 30- or 40-year depreciation rates in a 10- or 15-year world.

That's Nineteenth century thinking, too.

If the best interests of 1,300,000 employees and 1,900,000 investors are to be taken care of, railroads must not be penalized. When earnings are taken away from an enterprise, they are not there to help anyone.

2. An adequate return.

If railroad employees are to have greater security, greater earnings and greater opportunity, they—like everyone else—have got to help fight for a higher return for their companies. Money has got to be earned and paid out to risk capital so that risk capital will

flow to the railroads and help them become stronger—for the good of the employee, the shareholder, the shipper and everyone else. Money has got to be earned so that substantial amounts can be reinvested in modernization and cost-cutting methods. That's the way to low transportation rates. Earning a good return is evidence of health. It's like the big pumpkins and squashes at the county fair—evidence of good cultivation. It's the little shriveled-up pumpkins that should alarm us. Nobody shows off the shriveled-up pumpkins.

3. A transportation policy fair to all.

There is no doubt that our present transportation policy in this country is "loaded" against the railroads. That's part of the Nineteenth century thinking. Railroads get paid less for hauling 94 per cent of the mail of this country than planes do for carrying 6 per cent.

The point is that a transportation policy loaded against the railroads is loaded against railroad employees. It is *their* security which is threatened. It is *their* opportunity for advancement and increased earnings which is weakened.

4. A competitive approach to railroad services.

Railroads are today forced to perform services and maintain facilities which cut deeply into their earnings—into the pie which the employee must also consider his. They are services and facilities which the public does not want—as evidenced by its failure to use them. They are services and facilities which others can provide better—and will provide when the railroads are permitted to withdraw them.

Railroads are barred from good competitive practices common to every other carrier—things like quantity rates for shipping.

Railroads are required to do things no other carrier is required to do—take every kind of freight offered, for example.

All of this is Nineteenth century thinking. We need Twentieth century thinking.

Now, how do we proceed?

A Four-Point Program

Any program, it seems to me, involves these elements:

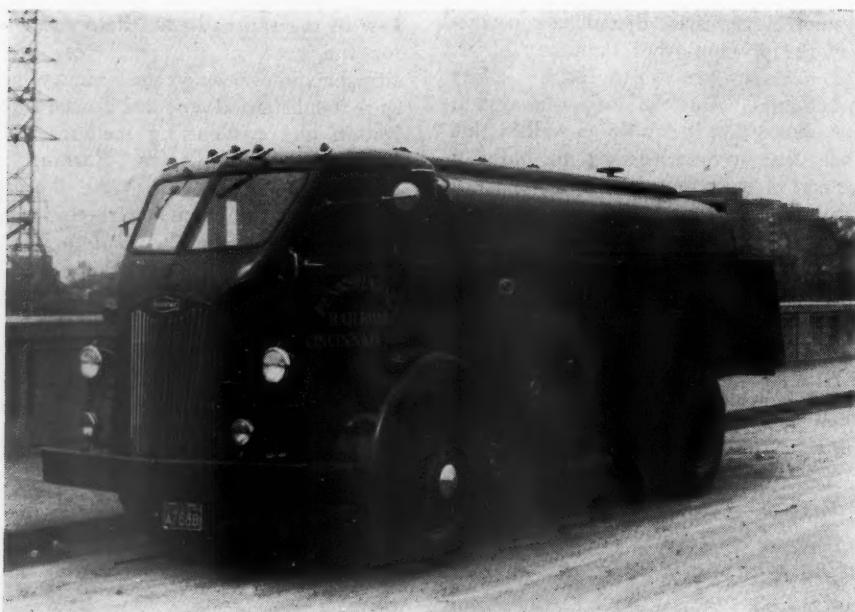
1. We agree that the problem is first and foremost a human problem—a problem involving the thinking of large groups of people who have a stake in the railroad industry. It involves me and you and all of us.

2. We agree that we can count on the full support and help of 1,300,000 railroad employees—backed by 1,900,000 security holders—if we can work out a plan clearly in the long-term and short-term interests of these groups.

3. We begin to develop our case with employees, shareholders and all who have a stake in the railroad industry.

4. We agree upon a plan and proceed to substitute a Twentieth century attitude toward the railroad industry for the Nineteenth century thinking which restricts railroad managements in so many ways, and to release railroading from some of the shackles which hold back its development.

I can't help feeling that we in the railroad field are living at a time when the materials for a great achievement lie all about us—a great achievement based upon the strong, successful, tested method of free men getting together for the good of all.



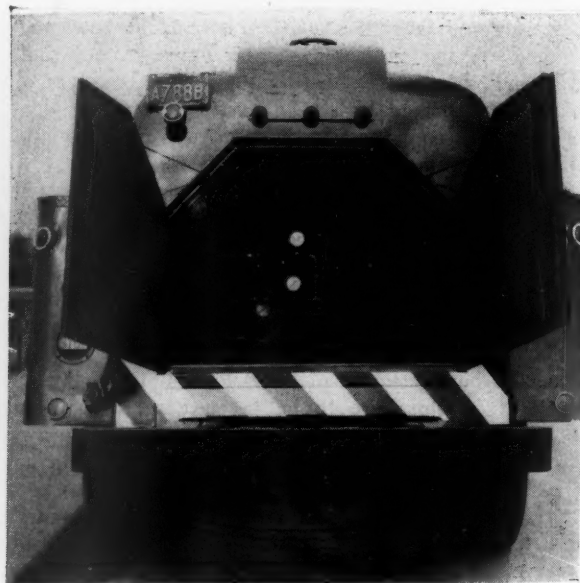
A Diesel servicing truck

REFUELING DIESEL SWITCHERS AT WORK

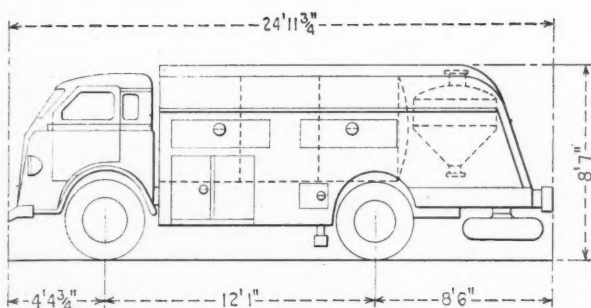
A system of refueling and resanding Diesel switching locomotives without requiring them to be brought into engine terminals or other fixed-location service stations has been developed by the Pennsylvania. The procedure is based on a fleet of 16 engine-under-the-seat Autocar trucks, on which are installed fuel-oil and sand tanks

and dispensing facilities. These trucks are dispatched from central points to the outlying locations where locomotives are working. Servicing proceeds at the rate of 50 gal. of fuel oil and 100 lb. of sand per min. A complete refueling takes about 10 min.

As an example of the possibilities, a switching loco-



Left—Hose reel and pump for transferring fuel oil. Right—Sand dispensing facilities



The sand hopper is behind the fuel tank

motive working out of Frankford Junction, Philadelphia, Pa., may be engaged at Red Lion, ten miles away. This locomotive has a capacity of 600 gal. of fuel oil and consumes 150 gal. in 24 hours. In three days, starting with a full tank, there will be about 150 gal. of fuel left and it will be time to refuel. It is estimated that it would take three hours for the locomotive to make the round trip to Frankford Junction for servicing and this would have to be repeated every three days.

Plans to develop railside service of Diesel switching locomotives were begun by Pennsylvania engineers in the fall of 1947. Investigation showed that the model U-70 Autocar, with its engine under the seat, best meets the requirements of maneuverability and weight distribution. The truck, which has a gross weight rating of 30,000 lb., has a comparatively short wheel base of 145 in., providing for a high degree of maneuverability along the right-of-way and in the yards. Because the front axle carries an unusually large share

of the load, the Autocar can carry more than ordinary loads without exceeding rear-axle weight limits imposed by law in various states.

The truck is equipped with a 1,500-gal. oil tank, divided into three compartments, which is carried at the forward end of the chassis. The tanks were built by the Rebmann Company, tank manufacturers at Philadelphia. Oil is pumped from the tank by a power take-off from the Autocar engine, using equipment similar to that employed on household oil delivery trucks. There are also cabinets for lubricants.

The sand hopper has a capacity of one ton and is placed back of the oil tank. The hoppers also were built by the manufacturer of the oil tanks. The sanding problem was to transfer the sand from the hopper to the sand box on the locomotive through a hose. Sand is fed by gravity into the conical hopper, which is a pressurized chamber, and is blown into the discharge line by an air jet at the point of discharge. An air dryer has been introduced into the intake air line to prevent moisture being carried to the sand. Compressed air is obtained by connection to the brake pipe of the locomotive being serviced.

Fully loaded, these service trucks carry 10,000 lb. on the front axle and 19,996 lb. on the rear—just under the 20,000-lb. rear-axle load limit in Pennsylvania, New Jersey, New York, and Illinois. On the trucks assigned to service in Ohio a bulkhead has been inserted in the rear oil-tank compartment which reduces the oil capacity to 1,230 gal., bringing the rear-axle load below that state's limit of 18,000 lb.

Trucks of this fleet are assigned to Chicago; Philadelphia, Pa.; Pittsburgh, Pitcairn and Scully; Buffalo, N. Y., and Morris Park; Jersey City, N. J., and Trenton; Cleveland, Ohio; Mingo Junction, Youngstown, and Columbus.

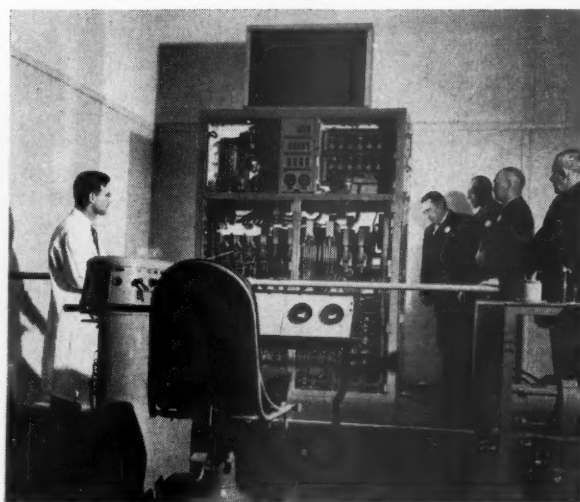
New Book . . .

PRACTICAL HANDBOOK OF INDUSTRIAL TRAFFIC MANAGEMENT, by Richard C. Colton. 384 pages, 65 illustrations. 6 1/4 in. by 9 in. Bound in cloth. Published by Funk & Wagnalls Co., New York 10. Price, \$6.

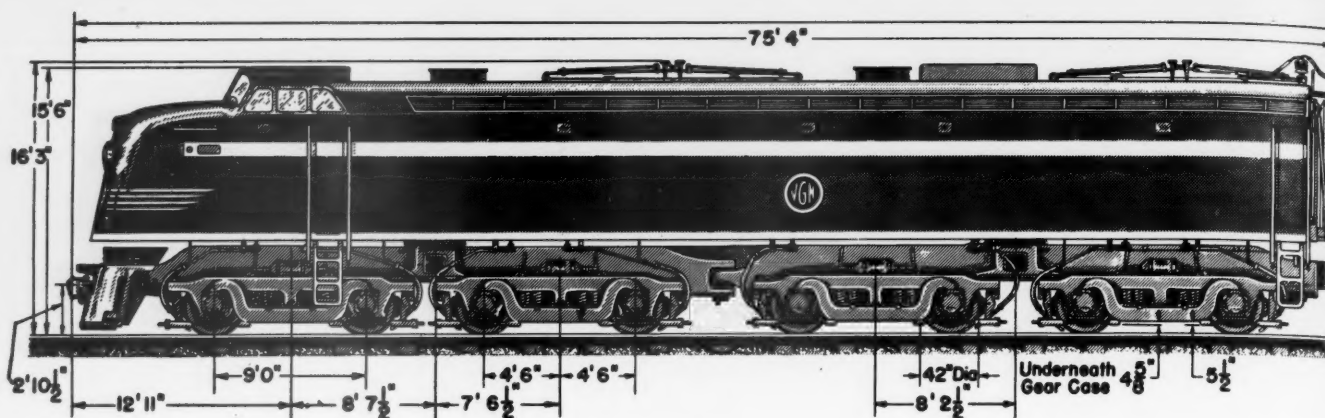
Mr. Colton, general traffic manager of R.C.A. Victor Division of the Radio Corporation of America, has compacted into a single volume a wealth of practical knowledge gained during his 23 years in the industrial traffic management field. He stresses the increasing importance of the industrial traffic manager's function; the advantages of knowing how to buy transportation intelligently, and the economy of knowing what constitutes good shipping practice.

In his 16 chapters, Mr. Colton discusses the very latest developments in the traffic field, touching on the use of pallets, mechanized materials handling, and the employment of packaging engineers.

The handbook appears to be an excellent text for the student of economics, traffic or transportation, or for the businessman interested in distribution problems. Its value as a reference book in the transportation and traffic field is enhanced by a complete index and a chapter defining miscellaneous transportation terms.



Four railroad men inspect an electrical panel board in the American Locomotive Company's Diesel-electric locomotive school. The board is operated from the control stand beside the engineman's seat in the center foreground; equipment is the same as that in an actual locomotive. During the school's course in construction, operation and maintenance of Diesel-electric locomotives, the men actually build a Diesel engine



VIRGINIAN'S NEW ELECTRICS MEET

Motor-generator type locomotives operate in same train with constant-speed units and also serve to improve time freight schedules

Four motor-generator type electric locomotives have now been in service on the Virginian for more than a year. They were purchased to handle increases in both coal traffic and manifest freight, and also to facilitate making class repairs on some of this road's original electric locomotives, which have now been in service for 24 years.

The new locomotives were designed and built to meet the railroad's functional specifications, and were delivered by the General Electric Company early in 1948.

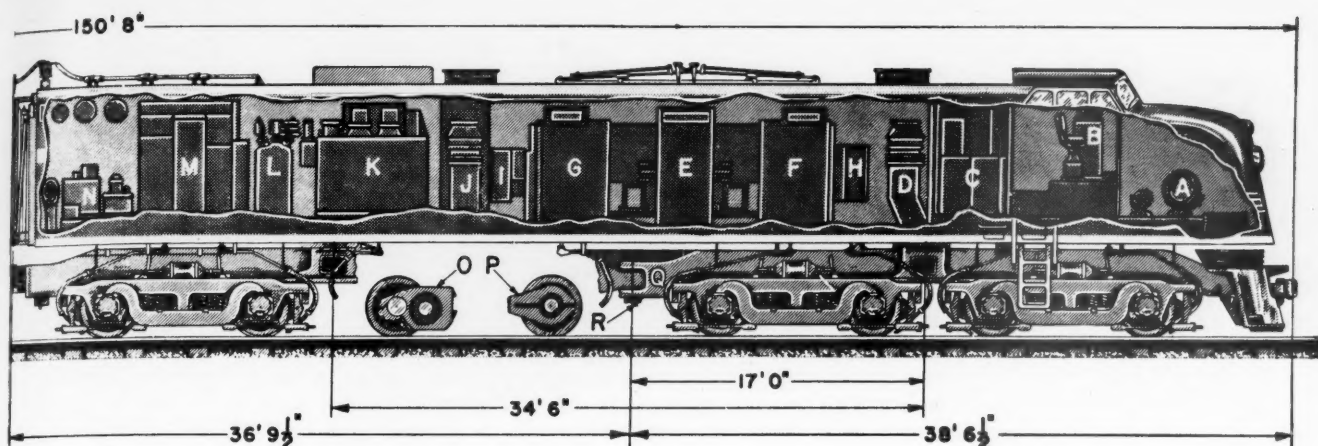
The original locomotives are of the split-phase type using induction motors and having running speeds of

14 and 28 m.p.h. Acceleration to these speeds is accomplished by means of water rheostats connected to the wound secondaries or rotors of the traction motors. The new locomotives are variable-speed units, changes in speed and power output being accomplished by controlling the field of the main generator. In spite of these basically different characteristics, the old and the new locomotives are used together for hauling 6,000-ton trains up the Virginian's 14-mile, 2 per cent grade.

A profile of the electrified section is shown on a following page. The major movement of loads is eastbound, with empties moving westbound. Normally,

A motor-generator type locomotive at the front and an induction-motor type locomotive at the rear of a 6,000-ton train





ALL REQUIREMENTS

By JACK HAUSE

Locomotive & Car Equipment Divisions,
General Electric Co.

two locomotives (one head-end and one pusher) take a 6,000-ton train from Mullens to Clarks Gap. Here the train is filled out to 9,000 tons and taken from Clarks Gap to Roanoke by one locomotive. Empties are moved westbound in 3,000-ton trains by one locomotive from Roanoke to Mullens.

When used alone, the new locomotives can be operated over some sections of the line at speeds up to 35 m.p.h. Intermediate speeds between 14 and 28 m.p.h. are also made possible by flexible control and high regenerative braking capacity. In some cases, trains are brought to a complete stop by means of regenerative braking alone.

In the movement of tonnage trains, speed is not the controlling factor, but in the case of time freights, where road speed is of more importance, the new locomotives can effect a reduction in running time over the electrified section of one hour and twenty minutes, including all time required for meets and operating delays incidental to regular performance.

Inspection requirements are simple and the locomotives can be turned in fifteen minutes. When necessary, a complete truck can be changed-out at a terminal in one and one-half hours. Sand is used only for starting on heavy grades, and the weight compensating feature, which allows for weight shift on the two axles of a truck during acceleration, is seldom used.

The motor of the motor-generator set functions as a synchronous condenser, and under conditions of regular operation, the new locomotives effect an improvement of 10 to 15 per cent in system power factor, and an increase of contact line voltage.

Average mileage for all electric locomotives is about 60,000 per year. Approximately 25 per cent of power used for hauling trains is returned to the line by regeneration. Additions are also being made to the railroad's power plant at Narrows, Va., to meet the increasing demand for power.

Cut-away view of one of the new locomotives

- | | |
|---|------------------------------|
| A. Auxiliary motor-alternator-generator set | J. Equipment blowers |
| B. Main control station | K. Transformer |
| C. No. 1 control compartment | L. Oil circuit breaker |
| D. Equipment blowers | M. No. 2 control compartment |
| E. Synchronous motor | N. Air compressors |
| F. Traction generator | O. Traction motor |
| G. Traction generator | P. Gear case |
| H. Regenerative exciter | Q. Span bolster |
| I. Main exciter | R. Articulation pin |

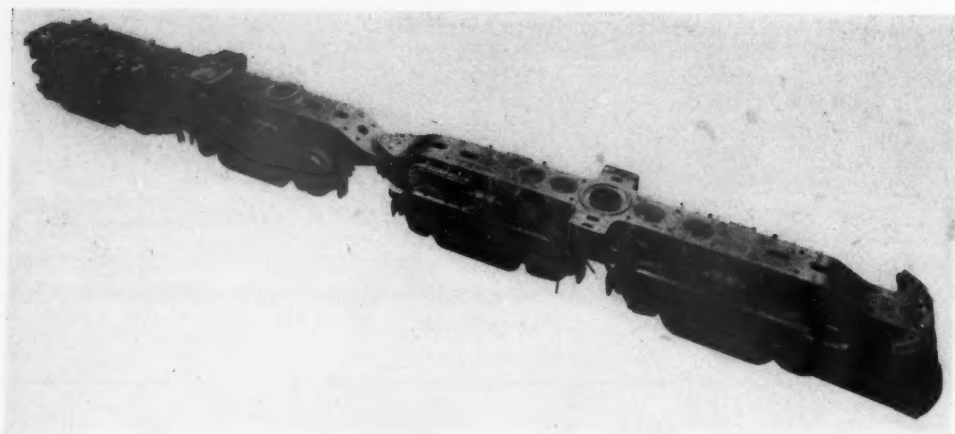
The new locomotives are streamlined for pleasing appearance and are of the most modern design. Special attention was given in design to the use of standard apparatus where possible. Outstanding is the traction motor, which is a duplicate of those in widespread use on large Diesel-electric road locomotives. The proper application of such standardized items results in lower costs and better service.

Each locomotive consists of two cabs and each cab is mounted on four two-axle swivel trucks (a total of eight trucks for each locomotive). The two halves of the locomotive are exact duplicates, and are permanently connected at the inside ends. A vestibuled walkway provides easy passage between cabs.

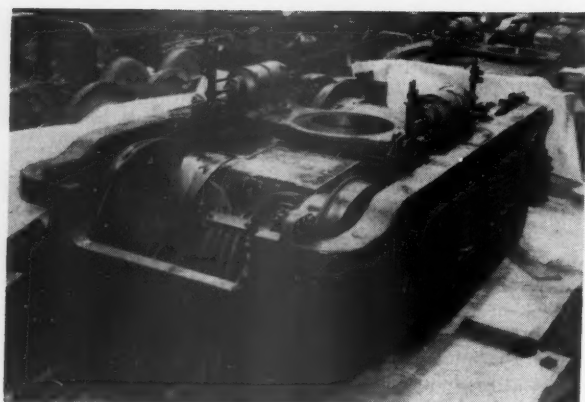
The locomotives operate under an overhead contact system, taking a.c. energy at 11,000 volts, single phase,

Table 1—Summary of Locomotive Dimensions and Characteristics

Wheel arrangement	2(B-B-B-B)
Total weight, lb.	1,000,000
Weight on drivers, lb.	1,000,000
Number of driving axles	16
Weight per driving axle, lb.	62,500
Continuous rating	
Horsepower at rail	6,800
Tractive force, lb.	162,000
Speed, m.p.h.	15.75
Adhesion, per cent	16.2
Starting tractive force at 26 per cent adhesion, lb.	260,000
Maximum operating speed, m.p.h.	50
Length overall, between knuckles	150 ft. 8 in.
Total wheel base	133 ft. 10 in.
Rigid wheel base	9 ft. 0 in.
Width overall	11 ft. 1 in.
Height over pantograph, locked down	16 ft. 3 in.
Driving wheel diameter	42 in.
Number of traction motors	16
Gear ratio	70/17
Contact line voltage (nominal)	11,000
Phase	single
Cycles	25
Air-brake equipment—straight and automatic	8-EL
Number of air compressors	4
Total capacity of air compressors, c.f.m.	600
Type of control—electro-pneumatic	PCL
Electric braking	Regenerative



Running-gear
assembly of
one cab



Truck assembly

25 cycles. This a.c. power is converted to d.c. power on the locomotives by step-down transformers and synchronous motor-generator sets. The d.c. power is distributed to 16 series-wound, axle-hung traction motors geared to the driving axles by single-reduction gearing.

The locomotives have two control positions and are arranged for full operation from either end.

Arrangement is made for regenerative braking using the traction motors as generators. Thus, during electric braking, the locomotives feed energy back through the motor-generator sets and transformers to the contact system.

A summary of dimensions and characteristics appears in Table I.

Three-Compartment Cabs

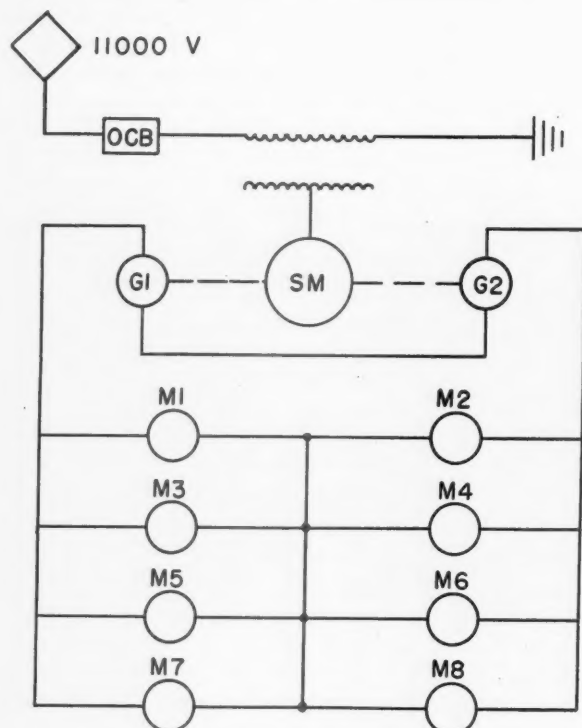
The locomotive cabs and cab underframes are fabricated from steel sheets, plates, and shapes by welding. The weight of the cabs and included apparatus is carried through the center sills and span bolsters to the truck center plates. There are no loading pads.

Each cab is divided into three principal sections—the nose compartment, the operator's compartment and the apparatus compartment.

The apparatus compartment has hatchways in the roof for removal of major equipment for repair and maintenance. The nose compartment has a removable plate, fitted and bolted to the outside front end for the same purpose. The nose is reinforced with collision posts for protection to the crew and equipment.

Each cab rests on two cast-steel span bolsters, each of which is carried on the center plates of two cast-steel trucks. There are four span bolsters and eight two-axle trucks per locomotive. The two outside end-span bolsters carry draft rigging and pilots on their outer ends. They are connected to the inside span bolsters under the center of each cab by pin and ball-and-socket articulation joints. The two inside-end span bolsters are connected between cabs by a solid steel draw-bar and radial buffer.

One span bolster under each cab has a fixed center plate while the other has a longitudinally sliding center plate. All draft and buffing forces are transmitted through the span bolsters. Each truck center plate



Simplified power-circuit diagram for one cab

transmits only that part of the locomotive tractive force developed on the two driving axles in that truck.

All trucks are duplicates and are interchangeable between locomotives, and also between truck positions on a given locomotive. Spare trucks complete with traction motors, etc., can be maintained for quick replacement of any truck on any of the four locomotives. The trucks are so arranged that all connections (cables, sand pipes, air-brake hoses, etc.) between the cabs and the trucks can be disconnected and reconnected in minimum time. This permits dropping any truck on a hoist table for quick replacement.

Each truck frame is a unit steel casting. The truck transom and pedestal jaws are cast integral with the frame. Twin equalizer bars of solid steel rest at each end on the tops of the journal boxes and carry the truck frame through combination coil and leaf springs. The journal boxes are equipped with roller bearings. The axle-hung traction motors have coil spring nose suspension. Wheels and gears are solid steel, and are pressed on solid forged-steel axles.

The approximate weights of principal components are as follows:

2 cabs complete	262 tons
2 outside end-span bolsters with pilots	33 tons
2 inside end-span bolsters with draw bar	29 tons
8 trucks complete with motors, etc.	176 tons
<hr/>	
Total locomotive weight	500 tons

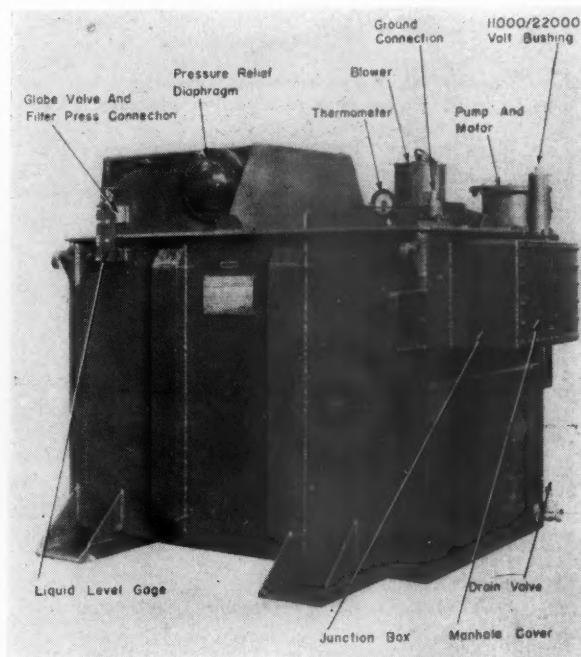
The control provides ultra-smooth locomotive performance. There are no series-parallel transition points over the entire speed range of 0 to 50 m.p.h.

The most desirable use of the traction-motor and generator characteristics is made by selective operation of the traction motors as either self- or separately-excited machines. This permits optimum use of power for motoring or for regenerative braking at reduced traction-motor field excitations.

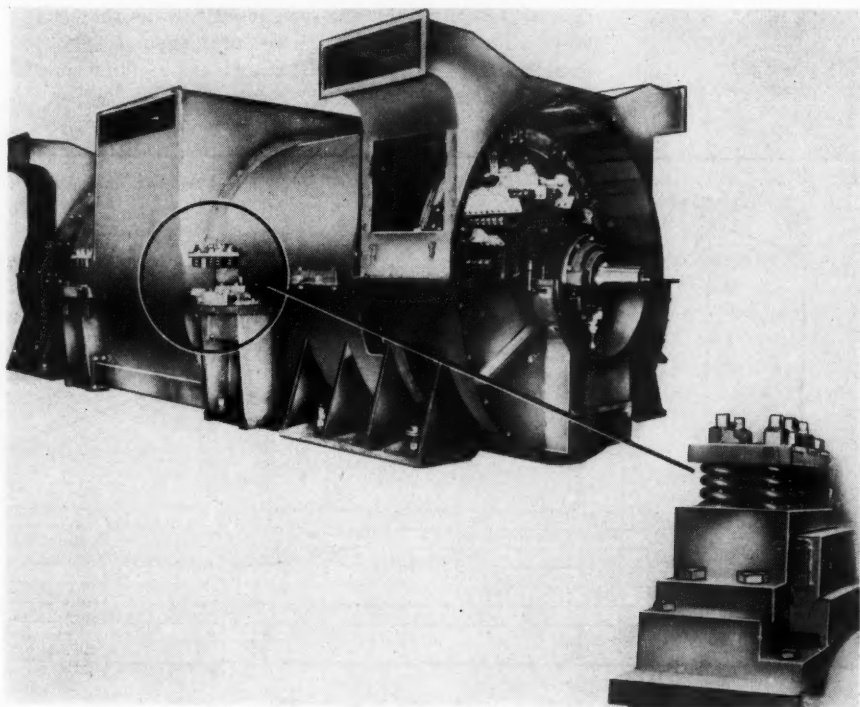
Driving-wheel slippage is held to a minimum by

permanent parallel connection of all traction motors. Selective weight-shift compensation is provided for further protection against wheel slippage on starting, especially with heavy trains. This weight-shift compensation is obtained by reducing the field excitation and consequently the voltage of the traction generators supplying power to the traction motors geared to the leading axles of each truck.

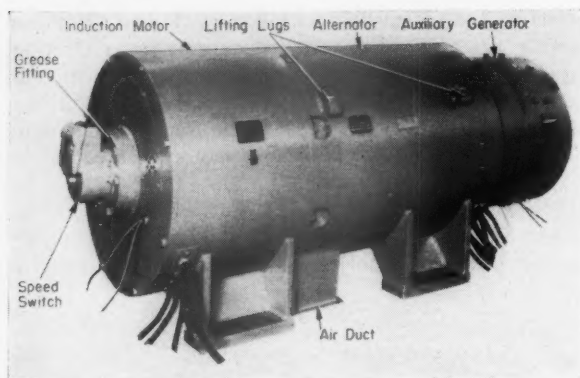
The master controllers, push buttons, valves, instruments, gages, and indicating lights are conveniently located in the operator's cab. Strong, rigid support is



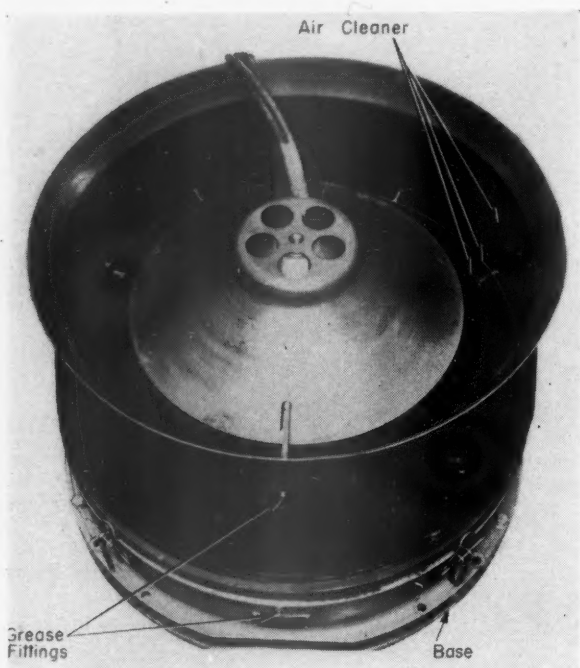
Above—Power transformer



Left—Main motor-generator set and detail of synchronous-motor spring mounting



Above—Three-unit auxiliary motor-alternator generator set
Below—Vertical-shaft induction-motor-driven equipment blowers



provided for all control devices, control wiring, and power cables. Special attention was given in the locomotive design to the desirability of having all devices convenient for inspection and maintenance.

The high- and low-voltage 25-cycle apparatus is protected by a primary protective relay. This relay detects electric grounds, overload, and short circuits. It has two trip positions. The first position opens the auxiliary circuits, and removes the auxiliary load from the main transformer. If this does not clear the fault, the relay automatically goes to full trip position and opens the oil circuit breaker, thus de-energizing the entire locomotive.

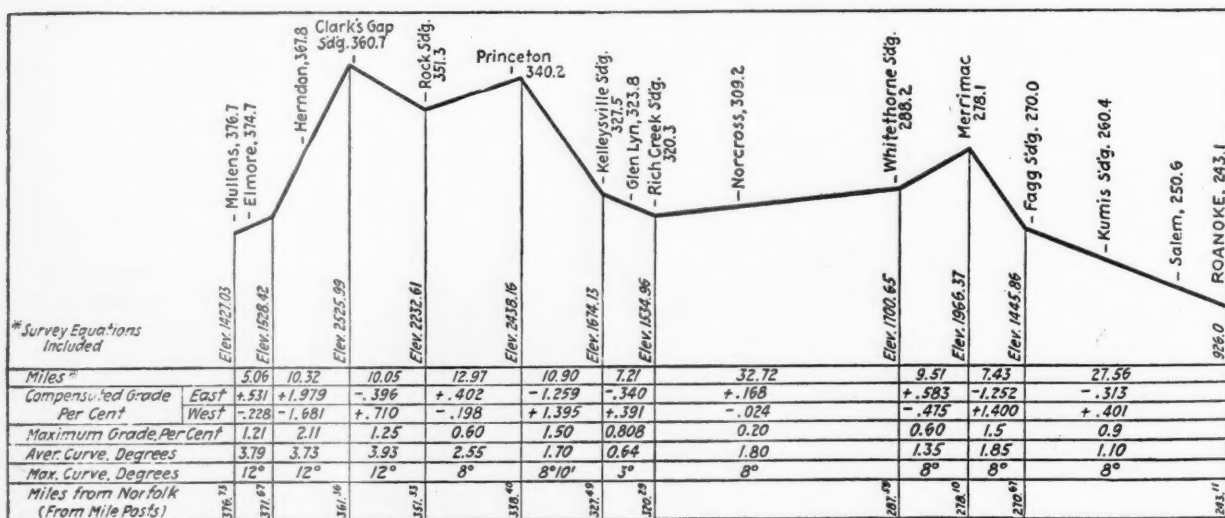
The traction motors are protected by high-speed circuit breakers and overload relays. The auxiliary apparatus is protected by the usual thermal and magnetic devices.

Transformers and Motor-Generator Sets

The main transformers have double-winding primaries, 11,000/22,000 volts. This makes them suitable for operation on the existing 11,000-volt contact system or, by reconnecting the windings, on a 22,000-volt contact system if the Virginian wishes to go to this voltage at some future time.

Each transformer is equipped with a motor-driven circulating pump and radiator for cooling the Pyranol. The low-voltage windings of the transformers have taps at 557, 795, 995, and 1,550 volts for supplying auxiliary loads and for running the main motor-generator sets. The secondary of the transformer is grounded by means of an auto-transformer and protective ground relay arrangement. To drain off lightning discharges that are transmitted to the secondary, a shunting thyrite discharge resistor is connected around the auto-transformer and relay arrangement.

A roof-mounted lightning arrester is connected to the line side of the oil circuit breaker. On the transformer side of the oil switch, and connected with as short leads as possible, a .25 m.f.d. high voltage capacitor has been installed. This capacitor will absorb transient generated by high voltage switching.



(Fig. 10) Profile of the Electrified Division of the Virginian from Mullens, W. Va., to Roanoke, Va.

PARTIAL LIST OF MATERIALS AND EQUIPMENT ON THE VIRGINIAN ELECTRIC LOCOMOTIVES

Headlights	Pyle National Co., Chicago	Bell ringer	Transportation Devices Corp., Indianapolis, Ind.
Windshields	Hunter Sash Co., Flushing, N. Y.	Speedometer	General Electric Co., Schenectady, N. Y.
Windshield wipers	C. A. Sprague Devices, Michigan City, Ind.	Trainline receptacles	General Electric Co., Schenectady, N. Y.
Windshield defrosters	General Electric Co., Schenectady, N. Y.	Auxiliary apparatus circuit breaker	Trumbull Electric Mfg. Co., Plainville, Conn.
Windshield wings	Prime Manufacturing Co., Milwaukee, Wis.	Insulators	Locke Insulator Corp., Baltimore, Md.
Sun visors	Fulton Company, Milwaukee, Wis.	Roller journal bearings	Timken Roller Bearing Co., Canton, Ohio
Side windows	O. M. Edwards Co., Syracuse, N. Y.	Hand brake	National Brake Co., New York
Seats, cab	American Seating Co., Grand Rapids, Mich.	Truck frame and span	
Horns	Leslie Co., Lyndhurst, N. J.	bolster castings	General Steel Castings Corp., Granite City, Ill.
Cab heaters	General Electric Co., Schenectady, N. Y.	Draft gear	W. H. Miner, Inc., Chicago
Door locks	Adams & Westlake Co., Elkhart, Ind.	Draft gear yoke	Buckeye Steel Castings Co., Columbus, Ohio
Inspection card holders	Adams & Westlake Co., Elkhart, Ind.	Couplers	National Malleable & Steel Castings Co., Cleveland, Ohio
Storage batteries	Electric Storage Battery Co., Philadelphia, Pa.	Driving wheels	Standard Steel Works, Eddystone, Pa.
Fire extinguishers	Walter Kidde & Co., Belleville, N. J.	Axles	Carnegie Illinois Steel Corp., Pittsburgh, Pa.
Sanders	Morris B. Brewster Co., Chicago	Truck springs	Union Spring & Mfg. Co., New Kensington, Pa.
"Little Watchman"	Wright Little Watchman Co., Greensboro, N. C.	Drawbar iron	Ewald Iron Company, Louisville, Ky.
Air brake schedule	Westinghouse Air Brake Co., Wilmerding, Pa.	Radial buffers	Franklin Railway Supply Co., New York
Air compressors	General Electric Co., Schenectady, N. Y.	Pantographs	R. D. Nuttall Works, Pittsburgh, Pa.
Foundation brakes	American Brake Division, Westinghouse Air Brake Co., Wilmerding, Pa.	Pantograph check valves	National Pneumatic Co., Rahway, N. J.
Brake shoes	American Brake Shoe Co., New York		
Flexible air ducts	Western Rubber Co., Goshen, Ind.		
Vestibule diaphragms	American Car & Foundry Co., New York		

Each transformer delivers power to a five-unit, four-bearing main motor-generator set at 1,550 volts, single-phase, 25-cycles. A complete motor-generator set consists of a single-phase synchronous motor, two traction generators, a main exciter, and a regenerative exciter. The synchronous-motor stator of the main motor-generator set is spring-mounted to isolate the 50-cycle vibration.

The set is started by using one of the traction generators as a starting motor. The starting power is supplied from the battery-charging generator of the auxiliary motor-alternator set in the nose of the locomotive. The main set is thus accelerated to about 460 r.p.m. The synchronous motor is then automatically connected to the 995-volt tap of the main transformer and the set further accelerated to within a few revolutions of synchronous speed.

Partial field is then applied to the motor to pull the set into synchronism and the motor connections are automatically transferred to the 1,550-volt running tap of the main transformer. The entire starting cycle takes approximately one minute.

Traction Motors

Each locomotive is equipped with 16 type GE-746 d.c. series-wound traction motors. They are conventional axle-hung, box-frame motors arranged for a spring-nose suspension. Considerable advantage in operation and maintenance is anticipated in their use because they are of standard manufacture and in wide use throughout the railroad industry.

Auxiliary Power Supply

Auxiliary power for each cab is supplied by a three-unit motor-alternator-generator located in the nose compartment. The driving motor of this auxiliary set is a 200-hp., 25-cycle, single-phase, induction motor which receives power from a low voltage (438 volts) tap of the main power transformer. The set operates at approximately 1,500 r.p.m.

The alternator of the auxiliary set is rated 157 kva. and supplies 125-cycle, three-phase, 260-volt power for the main equipment blowers and the traction-motor and transformer blowers.

The d.c. generator of the auxiliary set is rated 13.5 kw. and supplies power at 75 volts for lighting, small d.c. auxiliary power and battery charging. It also is used for starting the main motor-generator set as described above.

Blowers

The main motor-generator sets, traction motors and transformers are ventilated by vertical-shaft, 125-cycle, three-phase, induction motor-driven blowers. These blowers are special axial-flow units and have self-contained centrifugal air-cleaners incorporated where required.

Cooling air is admitted to the cab through special grill-covered roof hatches. Thence, the air enters the blowers from which it is distributed through ducts to the various apparatus units at the pressures and volumes required for proper ventilation. All apparatus, including the main motor-generator set, is ventilated by external blowing.

Air Compressors

Each locomotive has four motor-driven air compressors, two per cab. The four compressors give a total of 600 cu. ft. per min. air capacity. They are synchronized so that an equal amount of work is done by each compressor.

Pantographs

Each locomotive has three pantographs, two on one cab and one on the other. Space is provided on the roof of the second cab for future installation of a fourth pantograph if desired. The locomotives are normally operated with two pantographs raised. The third is a spare for emergency use.

BROTHERHOODS SEEK 40-HOUR WEEK FOR YARDMEN

The Order of Railway Conductors and the Brotherhood of Railroad Trainmen have presented "concerted" demands for the establishment of a 40-hour work-week and time and one-half for Sunday and holiday work for conductors and trainmen employed in yard service. (Contemplation of these demands was reported in *Railway Age* of March 12, page 99.) Their proposal would make the shorter work-week applicable also to affiliated crafts, such as car retarder operators, hump motor car operators, yardmasters, stationmasters, switchtenders and levermen, where these employees are represented by the O.R.C. or B.R.T. All yard employees would have their basic rate increased by two and one-half cents an hour in place of the daily earning minima established January 1, 1948, according to the proposal.

The two unions would establish—among other things—100 mi. and 5 hr. as the basic day in passenger service, with time and one-half for overtime. Initial terminal delay rules would be effected in all classes of road service. Road crews would be paid an expense allowance of not less than \$5 a day when away from home terminal. Trainmen required to handle or assist in handling mail would be allowed one-half cent for each mile operated for each three linear feet of mail space, at a minimum of 150 mi. This allowance would apply also to the conductors in charge of trains on which trainmen are so used. The title "dining car steward" would be applied to any employee in charge of a car in which four or more persons are employed for the purpose of serving food or drinks, and a number of ancillary benefits would accrue.

Carriers' Counter Proposals

The railroads have countered with proposals which, among other things, would:

- (1) Eliminate rules which fix starting times;
- (2) Reduce all monthly and weekly rates to conform to any reduction in the basic work-week;
- (3) Eliminate provisions for sick leave with pay;
- (4) Change the 1945 vacation agreement so as to conform to any possible shorter work-week;
- (5) Establish rules permitting split trips;
- (6) Eliminate the five-cent allowance created under the December, 1943, agreement and now included in basic rates "in lieu of claims for time and one-half pay for time over 40 hr. and for expenses while away from home";
- (7) Eliminate existing rules or practices which provide for payment for time held at away-from-home terminals, or for furnishing eating or sleeping accommodations;
- (8) Change the basic day in passenger service from 150 to 200 mi., 7½ hr. to 8 hr., and the speed basis for computation of overtime from 20 m.p.h. to 25 m.p.h.;
- (9) Change the basic day in through freight service from 100 mi. to 125 mi., and the speed basis for computing overtime from 12½ m.p.h. to 15½ m.p.h.;
- (10) Establish a rule giving the carriers the right to establish inter-divisional and inter-seniority district runs;
- (11) Establish a rule giving the carrier the right to pool cabooses and operate them inter-divisionally;
- (12) Eliminate all rules and practices which prevent conductors, trainmen and yardmen from coupling and un-

coupling air hose, making air hose tests, etc., a part of the regular day's work;

(13) Eliminate existing rules which provide daily, weekly or monthly earning guarantees;

(14) Change present rules to permit the combination of road and yard service, or the performance of more than one grade of service in a tour of duty, with compensation at the highest rate applicable to any class of service performed;

(15) Eliminate rules restricting the use of yard crews in service beyond switching limits;

(16) Establish a rule providing that the carrier shall have the right to operate regular crews on either a one-way or turn-around basis and through established crew terminals;

(17) Establish or modify rules so that the carrier may fix the starting time of employees; and,

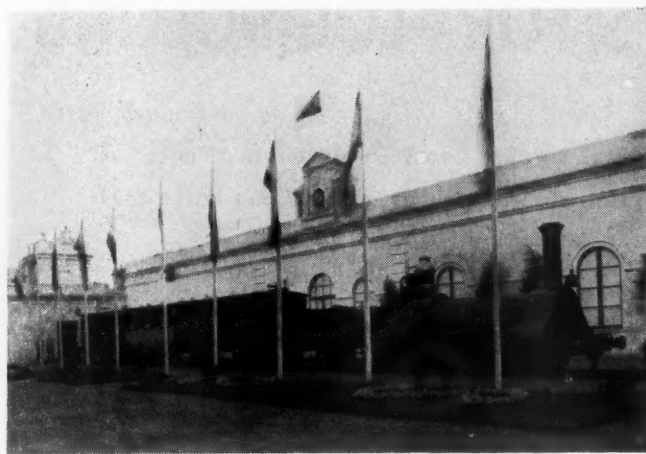
(18) Eliminate rules and practices which limit train length, specify the number of employees, or limit the number of locomotives or tonnage in a train, or which provide arbitraries for crew members by reason of the number of locomotives or cars or amount of tonnage.

The brotherhoods would have their proposals take effect on May 1, 1949. It is anticipated that no settlement will be made on the individual carriers and that the case will be handled by a national carrier conference committee and national officers of the unions.

The two brotherhoods, together with the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen & Enginemen, and the Switchmen's Union of North America, currently have demands dating from November 18, 1948, before the carriers for increased vacation benefits, on which national negotiations were begun at Chicago on April 19.



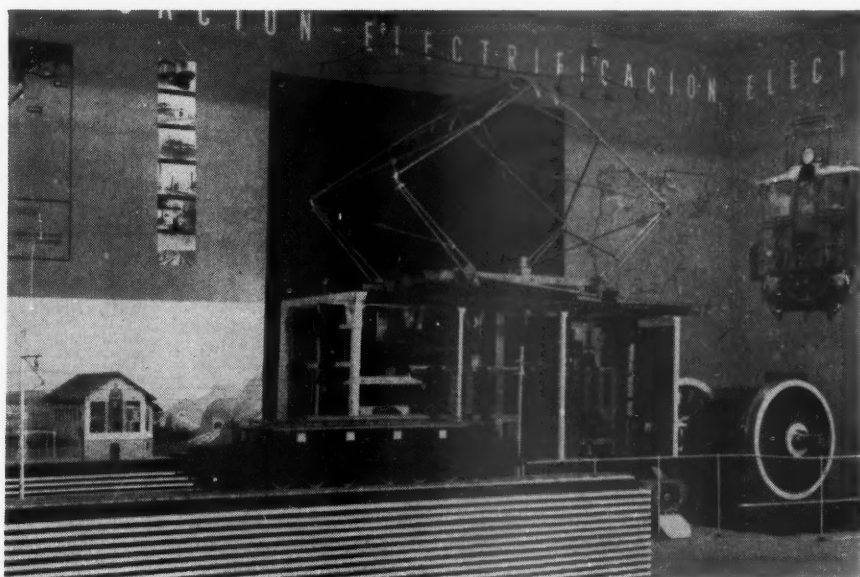
How research is producing better railroads and railroading was discussed by four railroad officers over radio station WLS in Chicago last month in connection with the 50th anniversary meeting of the American Railway Engineering Association. Those who participated in the broadcast, were, from left to right, Frederick S. Schwinn, president of the A.R.E.A. and assistant chief engineer of the Missouri Pacific Lines; Charles H. Mottier, past president of the A.R.E.A. and vice-president and chief engineer of the Illinois Central; Arthur C. Page, WLS farm program director; William T. Faricy, president of the Association of American Railroads, and Albert R. Beatty, assistant vice-president of the A.A.R.



Left—A full-scale reproduction of the first train in Spain, which made its first run from Barcelona to Mataro on October 28, 1848, in front of the reconstructed facade of the original station. Right—New standard steel open freight car, with removable stanchions

RAILWAY CENTENNIAL IN SPAIN

*Special exhibition at
Barcelona marks 100
years of railroading*



Right—Electrical display
at the Barcelona exhibition



Left—Modern "Santa Fe" type mixed traffic and "Mountain" type express locomotives, each capable of developing 3,000 hp. Right—Modern electric locomotive

THE PUBLIC PAYS FOR "LOG-ROLLING"

Heavy log trucks boost maintenance cost of Washington state highways two and one-half times

Maintenance of highways used by heavy log-carrying motor trucks is costing the state of Washington more than two and one-half times as much per mile per year as is maintenance of similar highways carrying only general traffic, according to an article in the April issue of *The Trend*, quarterly publication of the University of Washington's Engineering Experiment Station.

The article, condensed from a paper read before the 1949 Northwest Road Conference by E. M. Horwood, instructor in civil engineering at the university, states in part:

There appears to be no opposition to the theory that increased loads mean increased maintenance. . . . A rapid survey of the last maintenance budget in Washington reveals substantially higher costs for those roads servicing the logging industry. The 1947-1949 routine maintenance appropriations for three arbitrarily chosen state roads subject to heavy logging traffic averaged \$1,320 per mile per year. Similar figures for three arbitrarily chosen roads subject to general traffic average \$518 per mile per year. That is, for routine maintenance alone the roads subject to heavy logging trucks had 2½ times the appropriations of the roads subject to general traffic, part of which was fruit and grain produce. The state maintenance engineer was of the opinion that extraordinary maintenance would add to the discrepancy.

Earlier in his article Mr. Horwood had pointed out by traffic flow maps that "routes of heaviest logging traffic are not too closely integrated with the main traffic streams." He does state that, "had these logging roads been originally designed for that purpose it might have altered the maintenance picture appreciably," but does not give any estimates of the added initial cost required to build such heavy-duty highways.

400,000-Lb. Truck Loads

The possible financial burden which heavy log trucking may impose upon Washington's public road funds in years to come, by requiring either initial construction of roads to higher standards or extraordinary maintenance, is indicated by Mr. Horwood's statements concerning gross weights of vehicles already being operated. On state highway systems, he says, trucks are limited to approximately 70,000 lb., but:

Where private roads connect the loading platforms to the mills, gross vehicular weights between 100,000 and 150,000 lb. are common. Average loads of approximately 200,000 . . . and maximum loads as high as 400,000 lb. have been recorded.

Loads of that size, Mr. Horwood indicates, are carried principally on private roads built by the loggers themselves; but he further suggests that many of the

logging companies, especially the smaller ones, are reaching the point where they "may be willing to balance greater use of the public road system [including heavier axle weights and heavier gross loads] along with increased users' fees against the cost of construction of private roads for ever-lengthening hauls."

Trucks Replace Trains

During the past 15 years, Mr. Horwood says, "log transportation has been changing from railroads to trucks." More than 5,000 mi. of private logging railways "have been replaced almost completely by trucks and roads." The change has created not only the problem of increased public highway maintenance costs, but also of bridge construction, safety and interference with other highway traffic. With reference to those problems, the author says in part:

Bridges with spans ranging from 30 to 100 ft. are most affected by increased gross weight. Few of Washington's 7,000 bridges were designed for the loads they now carry regularly.

Safety and Interference

Important as the logging industry may be in the Northwest and whether or not the industry is paying its own way are factors apart from the rights of others to participate in the agricultural, commercial and recreational use of the public roads. In Washington the tourist industry follows close upon the heels of lumbering in importance, and is equally seasonal. The geometrical aspects of the highways are sometimes more significant than the structural when it comes to imposing limitations on the type and flow of traffic. Logging operations certainly have a nuisance characteristic on many roads, and impose a psychological handicap on the general highway users. Their effect on safety also bears study. It is generally believed that increasing the allowable gross weight 10 or 15 per cent would not call for increased bunk widths on the type of vehicles now carrying maximum legal loads, although the balancing of the loads would become more critical and create somewhat more of a road hazard. Decreased speeds with heavier loads would impose an increased hardship on other users unless statutory measures were taken to preserve favorable power loadings.

In his summary, Mr. Horwood calls for, among other things, state studies "of both routine and extraordinary maintenance costs on all existing roads . . . to evaluate the burden imposed by the logging industry; a plan to obtain more data on log-hauling operations with a view to allocating costs, [and] . . . a reasonable program of highway use and a schedule of users' fees."

COMMUNICATIONS...

Cites Economies of Continuous Rail

TO THE EDITOR:

The editorial on page 40 of the April 9 *Railway Age*, entitled "Maintenance Labor vs. Stronger Track," was very interesting. In connection with the shorter work-week for maintenance employees, with the consequent increased cost to the railroads, you suggested that the answer might rest in savings to be obtained by using heavier rail, an address on which was given at the recent meeting of the American Railway Engineering Association.

Considerable stress is given in the editorial to the maintenance savings that can be effected by making a 30-per cent increase in rail investment for heavier rail, but it overlooks any reference to a 30-per cent saving in maintenance labor that can be effected through the use of continuous rail with an added increase of only six or eight per cent in the cost of rail renewals. The 30-per cent saving to be derived through the use of continuous welded rail appears in a report that you will find in a recent publication of the A.R.E.A. after a study had been made of the welded rail in service on the Delaware & Hudson. The studied reports of the A.R.E.A. should carry much more weight than the opinion of a few that heavier rail has higher potential in maintenance savings.

In looking over railroad annual reports for 1948, we find that track laying and surfacing accounts run about 30 per cent of total maintenance-of-way and structures expenditures. According to official A.R.E.A. reports, 65 per cent of track labor is chargeable to Account 220, Track Laying and Surfacing, and the reports also state that about 75 per cent of this charge covers the labor used in tamping at or in the vicinity of the joint. Based on this estimate, some railroads could increase net income very substantially if they had large amounts of continuous rail.

LEM ADAMS
Vice-President,
Oxweld Railroad Service Company

Would Beat Truckers at Their Own Game

NEW YORK

TO THE EDITOR:

Current worries over truck competition and what trucks may do to railroad revenues are but a prelude to what is in store unless the railroads meet the new competition. Such fast scheduled trains as the New York Central's "Pacemakers" meet the demands of good service but they do not meet the competition of trucks. I submit that this competition will never be met on the basis of railroad practice to date, and for fundamental reasons. Such competition can be met only by changing traditional methods and concepts. That the roads have not done.

Let us take one specific case. Freight charges on oranges from Florida to Rochester, N. Y., are about \$1.35, trucks charges \$1.15. Trucks made the run in three days, freight cars in six. There you have the epitome of the problem. Why should it require twice as long to make a run on rails as on the highways? The basic trouble lies in clinging to the concept of *mass transportation* in competing with a concept that is the very opposite—short, swift, highly mobile units, trucks. The answer to that kind of competition is short, swift, direct freight

trains making complete runs between distant points with no more than one break-up. That means freight trains of ten cars, fifteen or twenty cars, making runs in less than half current schedules, largely by eliminating lost time.

At once the practical railroad man will throw up his hands and cite many obstacles—including the increased cost of labor for such short trains. A whole crew for as few as ten cars? Preposterous! But is it? Truckers hire 35 to 40 men to man trucks to carry as much freight as this ten-car train could haul with only three men. That cannot just be brushed off.

How can it be done? One explanation lies in speed—maximum use of facilities. If a truck can make a trip in three days against six for a car that truck can produce just twice as many revenue ton-miles in a given time. Running several short trains in place of one long one would raise difficulties, of course. The problem is to overcome them. What is there to prevent running short, fast freights as first sections of passenger trains? Out of Boston, for instance, all the way to Washington or even to points far south before being broken up or remade? The freights, stopping only for crew changes, could keep well ahead of passenger trains making station stops.

To establish such service the carriers would have to go to the country with a demand that featherbedding costs and practices be eliminated, that the railroads be given the same opportunity as truckers to demand a day's work for a day's pay.

These facts cannot be dodged. The railroads are losing the highest paying freight and losing it fast. They are losing it to a form of transportation with an enormously high labor cost per ton of capacity; to a form of transportation that violates all the pet theories of mass transportation advocates. They are losing it because trucks give a far higher ratio of use—more mileage and hence higher earnings per day at a lower ton-mile cost. Mile-long trains can no more meet the modern, single unit, fast, direct, mobile competition than a hippo can outrun an antelope. Railroad management has got to get down to brass tacks and throw out the window many preconceptions and habits.

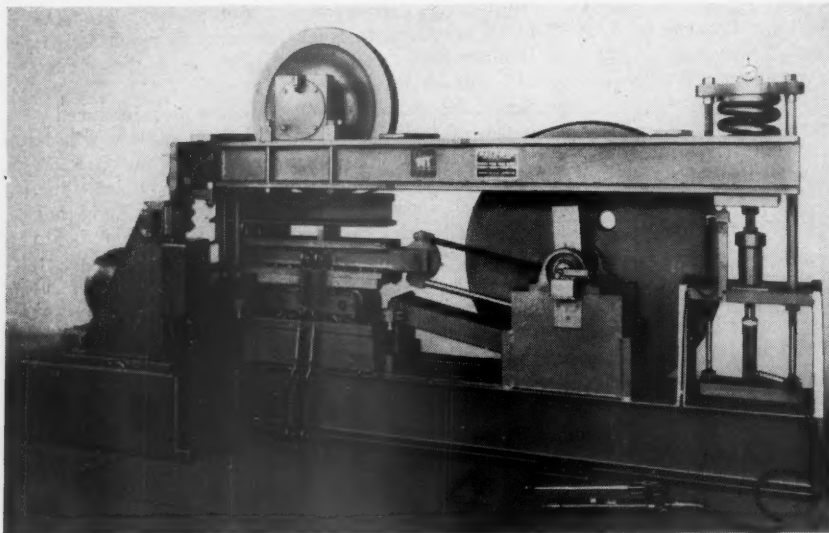
DELMAR HUBBELL

PLAQUE FOR FREEDOM TRAIN LOCOMOTIVE.—

Back from its 15-month tour of the nation, the famous "Freedom Train" locomotive is being repainted at the American Locomotive Company's, Schenectady, N.Y., plant before being placed in passenger service on the Gulf, Mobile & Ohio between Chicago and St. Louis, Mo. The plaque shown here will be placed on the locomotive before it takes up its new assignment



New and Improved Products of the Manufacturers



BALDWIN MACHINE FOR TESTING RAILS

The Baldwin Locomotive Works, Philadelphia, Pa., has developed a new machine for applying rolling fatigue loads to rails, which simulates actual service conditions. It consists essentially of a reciprocating carriage, crank-driven by a 10-hp. motor through a large V-belt sheave that serves as a flywheel, and a 32½-in. loading wheel mounted on a loading beam. The carriage moves on two supporting rollers and is preloaded by springs to counteract inertia forces of reciprocating parts. The loading beam is pivoted, being held at one end by two horizontal and two vertical steel flex plates, and loaded at the other end by a hydraulic jack through a spring, the deflection of which is measured by a dial indicator. The beam multiplies loads by five.

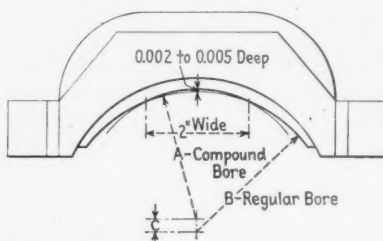
To operate the machine a section of rail about 50 in. long and up to 8 in. high is mounted longitudinally on the reciprocating carriage in such a way that 12 in. of the rail section overhangs its support as a cantilever. As the rail moves with a 12-in. stroke at 125 cycles per minute the loading wheel is applied to the cantilever portion of the rail. By adjustments of the loading beam the intensity of the load applied by the wheel may be varied from 6,250 lb. to 80,000 lb., and a bending moment as high as 960,000 in.-lb. may be produced in the rail. The number of cycles completed

when failure of the rail occurs is registered by a revolution counter. The machine is 13 ft. long, 81 in. high, 52½ in. wide, and weighs about 16,000 lb.

COMPOUND-BORE JOURNAL BEARING

A compound-bore journal bearing for both freight and passenger car service has been announced by the National Bearing Division of the American Brake Shoe Company, 4930 Manchester avenue, St. Louis 10, Mo.

A secondary bore has been precision machined in the bore of the standard journal bearing for wider initial contact area with the journal to aid the formation of the fluid lubricating film and to minimize the film pressure. This



Design of the compound-bore journal bearing. Values of dimensions A, B and C for different-size journals are listed in the table

is said to result in a lower temperature run-in and to contribute to the reduction of hot boxes during the breaking-in period. The compound bore provides a better fit on undersized axles too, minimizing the necessary conformation of the bearing to the smaller axle sizes.

Table of Dimensions for the Compound-Bore Journal Bearing

Size	A - DIA.	B - DIA.	C
5 x 9	5.004	5 1/16	1/32
5½ x 10	5.504	5 9/16	1/32
6 x 11	6.004	6 1/16	1/32
6½ x 12	6.504	6 9/16	1/32



WORK CRANE

A new crawler-mounted crane designed especially for railroad work has been announced by the Unit Crane & Shovel Corp., Milwaukee, Wis. It is known as the Unit 817R. The outstanding features of the machine include swing limit stops, low overall height, tapered counterweight, narrow-gage crawlers, and short tail swing.

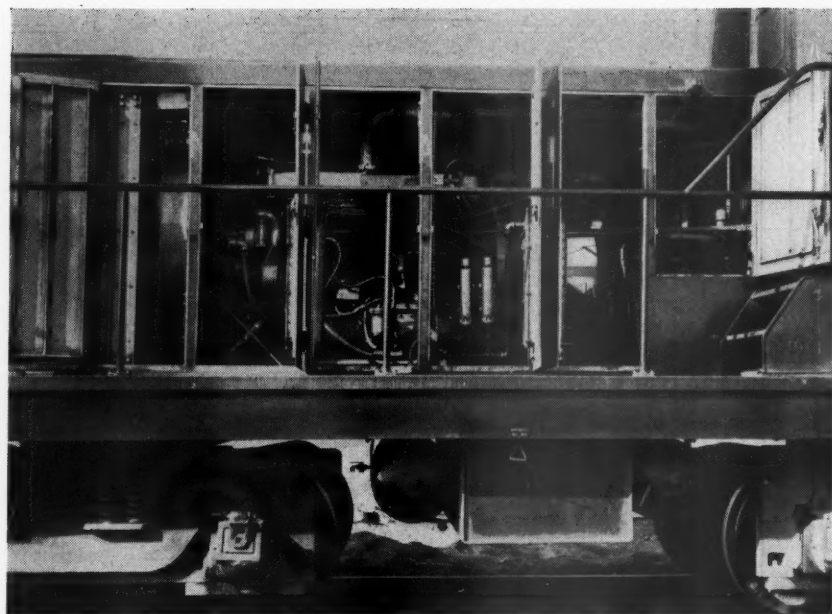
HIGH-SPEED DIESEL ENGINE

The latest addition to the line of Diesel engines manufactured by the Cummins Engine Company, Columbus, Ind., is the Model NVHS-1200. This engine is a four-cycle, 12-cylinder supercharged V-type with a maximum rating of 550 hp. at 2100 r.p.m. With its naturally-aspirated companion model, the NVH-1200, which develops 400 hp. at the same speed, Cummins Diesel engines now cover the range from 58 to 550 hp. The two new engines have weights of 4,550 and 4,300 lb. respectively, for the supercharged and non-supercharged models, with corresponding weights per horsepower of 8.3 and 10.8 lb.

The cylinder block is a single casting with the twelve cylinders set at a V-angle of 40 deg. This was arrived at after exhaustive study of the power impulses and harmonic forces on the crankshaft and was chosen to minimize the torsional vibration over the wide speed range.

The cylinders are staggered, the right bank being slightly ahead of the left to allow the connecting rods to be mounted side by side on the crank pins. This design avoids forked or articulated rods and permits the use of conventional rods which are alike for both banks.

The crankshaft is the conventional six-throw type, dynamically balanced and counterweighted to minimize the loads on the bearings. All journals and pins are induction hardened to approximately 50 Rockwell. A viscous friction damper is available to control torsional vibration



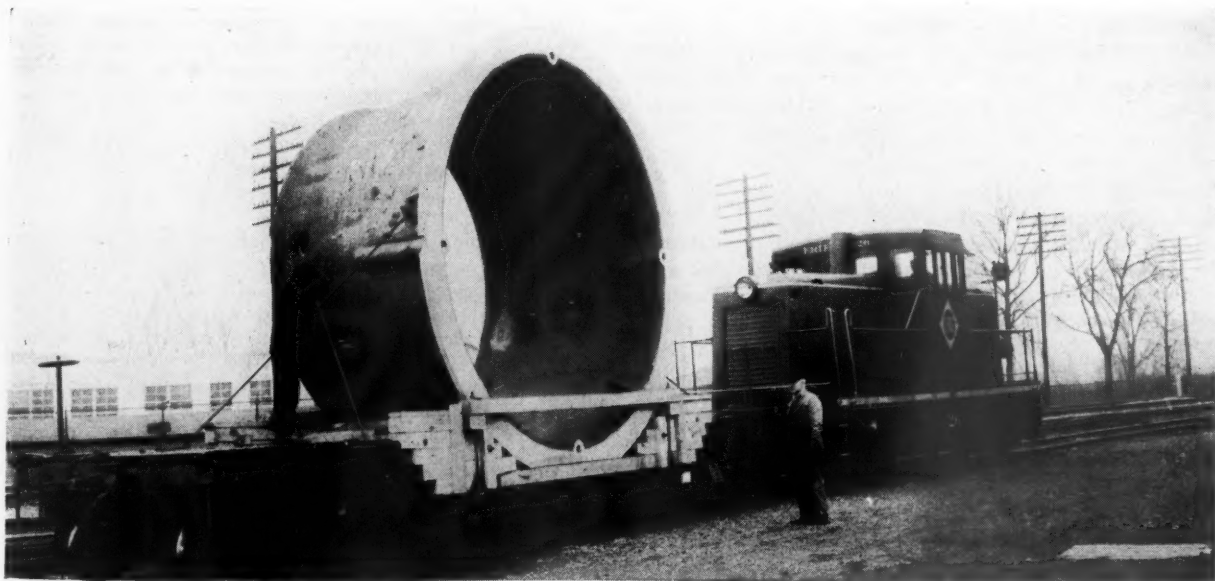
The Cummins 550-hp., 4,550-lb. supercharged high-speed Diesel engine applied to a General Electric 65-ton switching locomotive

and allow a wide speed range on special applications.

The pistons are of heat treated aluminum with the skirts having an interrupted surface in a diamond pattern which provides lubrication to keep wear at a minimum. Piston rings are of Keystone section better to combat the sticking tendencies of present fuels. The top ring, which takes most of the load, is chrome faced.

The fuel system was developed by Cummins and has two pumps, each one serving six cylinders, which are driven to-

gether but are timed to the two banks. The speed is controlled manually but is maintained at idle by a low-speed governor, and at the maximum speed range by a high-speed governor. The engine is further protected by an overspeed trip and by the built-in characteristics of the fuel pump, limiting the speed in the event of a line failure. A feature of the fuel system is the low fuel-line pressure, only 120 to 180 lb., between the single-plunger, distributor-type fuel pump and the injectors.



The Erie's "high-and-wide" route was used to move this 50,000 lb. blast furnace hopper from Glassport, Pa., to Indiana Harbor, Ind. The huge casting, made by the Pittsburgh Steel Foundry Company for the Inland Steel Company, measured 18½ ft. above the rails after it was loaded on a special depressed-center flat car, and 10 ft. 3 in. wide.



A G. E. 50-ton Diesel-electric industrial locomotive shoving a string of loaded buggies alongside the open hearth building

DIESEL SERVICE IN A STEEL PLANT

Seven American Locomotive Company-General Electric Diesel-electric locomotives are doing 25 per cent more work than nine steam locomotives did previously in the plant of the Weirton Steel Company, Weirton, W. Va. In handling switching operations, three G. E. Diesel-electrics are reported to do the work of four steam locomotives.

Weirton has 56 miles of intra-plant track, with grades ranging up to a maximum of 15 per cent. Until early 1945, when the first of the Alco-G. E. locomotives arrived, all operations were performed with 14 coal-burning locomotives. These have been replaced by three Alco-G. E. 660-hp., five Alco-G. E. 1,000-hp., and five G. E. 50-ton Diesel-electrics. The 660-hp. and 1,000-hp. units handle the switching of incoming and outgoing freight cars to and from the connecting main line railroads, while the smaller ones each have a special assignment in yard transfer and switching.

In two places in the yard, one Diesel-electric is handling in one trip the work that it took a steam engine two trips to do. Availability of the Diesel-electrics is high as compared with steam—the ratio being 97 per cent compared to approximately 60 per cent.

Until the new units were placed in operation, it had always been necessary to withdraw a locomotive from the switching yard to replace one undergoing repair. Now the Bessemer and open hearth furnaces are serviced with no shortage of switching power necessary during repairs and overhauls.

All the new locomotives work 24 hours a day, seven

days a week, with two exceptions: one 1,000-hp. unit works 16 hours a day, seven days a week, switching cars to and from the iron ore stock piles, and one 50-tonner is used as a standby.

SHOULD SOCIALIZED RAILROADS BE SUBSIDIZED?

Let us accept—as we must—that our railways are strategically essential to the nation and that, at whatever cost, they must be maintained at a high level of efficiency. . . . Is it unreasonable to question the justice of placing this burden upon industry and the traveling public alone? Would it not be possible for the government to assess arbitrarily the value to the community of this strategic factor and carry it as a charge upon the exchequer? In essence it is not different from other charges—the Services, for instance—which are the responsibility of the Defense Ministry. Subsidies are objectionable but sometimes unavoidable; we are subsidizing foodstuffs to the tune of £484 million today

If something like this were done and the railroads were relieved of a proportion of their overheads, which are so different in degree from those of road, coastal and air transport, they could . . . be ready to contribute on a more comparable level towards a vigorous, economic and adaptable service. Can British railways ever be made to pay, with their present load of overheads, without their charges being raised to an uneconomic level and one which would ultimately drive still more traffic away from their system? Can they even say that their present passenger fares are not too high for the purse of the ordinary traveler?

Have we not been content to continue to apply year after year the same rigid considerations to railway finances, despite the fact that the general transportation situation itself has changed so materially?

—From a paper in *Modern Transport* (London) by A. G. Marsden, transport adviser of Lever Brothers and Unilever Ltd.

GENERAL NEWS

Bumper Wheat Crop Will Tax Car Supply

Gass calls for continuance of heaviest practicable loading

Despite cancellation of the Office of Defense Transportation's minimum-loading orders and the present surplus of "some types" of cars, it remains "obvious that the freight car supply, particularly box cars, is such that the heaviest practicable loading must be continued if car shortages or stringencies are to be avoided," Chairman Arthur H. Gass of the Car Service Division, Association of American Railroads, said in his latest monthly review of the "National Transportation Situation." Beginning in May, Mr. Gass pointed out, the railroads "will have to start transporting not only another bumper winter wheat crop but also a tremendous carry-over of grains now under loan and purchase agreements."

In his report on the observance of Car Service Rules, the C.S.D. chairman said the number of cars on home lines "continues to show improvement." He added that the "high percentage" (40.4 per cent) of box cars now at home "augurs well for the necessary upgrading of this type of car for heavy summer duties facing us during the grain movement." At the same time, he urged continuing cooperation of shippers in the loading of cars to and in the direction of home roads to the greatest extent possible.

Box Car Supply "Slightly" Tighter

Coming to his discussion of equipment conditions by types of cars, Mr. Gass said the demand for box cars has "tightened slightly during the past month." Box car shortages, however, are confined entirely to the better grade car, while the supply of lower class and rough loader types is more than ample, with surpluses averaging 24,001 cars daily during the week ended April 9 compared to 3,742 daily for the corresponding week of last year. The principal western grain roads, Mr. Gass added, are already preparing their car supply for handling what may be the second largest winter wheat crop on record.

Meanwhile, he noted that the problem of the railroads is further complicated by the large carry-over of last year's small grain crops which have been held under government loan and purchase agreements. "Unfortunately," Mr. Gass continued, "none of these grains can be moved from country elevators and off

farms where it is stored until after April 30, the date on which purchase and loan contracts expire." Thus, he added, "there will be a large volume of last season's production requiring transportation at the same time the new winter wheat crop starts to move about May 15."

As to single and double deck stock cars, Mr. Gass reported that demands "are expected to increase" the last of April when the spring livestock movement gets under way, but the supply of stock cars is ample and "it is not anticipated that livestock originating roads will have any difficulty in taking care of demands currently."

Open-Top Situation Is Good

With respect to the open-top car situation, he reported "we may expect increased production" of coal in the weeks ahead "to replenish stocks and build up a greater margin for the future." On March 1, he added, "industry reported a 45-day supply of bituminous coal on hand, which was cut down by April 1 to about a 35-day supply."

As to lake navigation, Mr. Gass noted that the season opened on March 26, nine days earlier than in 1948. Due to this early start, he added, up to April 11, "over three times as much ore and nearly twice as much coal have been moved compared with the corresponding period last year." Thus, revised estimates "now indicate about 48 million tons of coal and upwards of 85 million tons of ore will be transported on the Great Lakes during the eight-month season of navigation," he continued.

As to the hopper-car supply, Mr. Gass reported that nearly 29,000 hoppers have been added to railroad ownership during the past year, which, with lighter demands, "accounts for the fact that we have had no hopper car shortage of any consequence thus far in 1949."

Gondola loadings for the 14 weeks, he continued, "are still trailing" those of the same period last year, but demands, stimulated by the record production of steel during the first quarter, "are gradually increasing." Although ownership of gondolas on April 1 this year was about 4,800 less than the same date last year, he added, "this deficiency should be overcome during the next six months with delivery of new cars now on order."

As to plain flat cars, Mr. Gass reported that present demands are not heavy except for 50-foot and longer types for movement of agricultural machinery from the Middle West; however, he added, considerable activity continues in the distribution of large capacity flats and well and depressed center

types. Covered hopper loadings "are up 5.2 per cent compared with last year," Mr. Gass reported, but the increase of approximately 3,200 units in railroad ownership "should be very helpful during the peak loading months ahead."

Equipment figures included in the report showed that the net gain in ownership during March was 2,320 cars, chiefly consisting of hoppers. Average turn-around time for freight cars was 18.02 days in March, compared with 15.8 days in March, 1948. The number of cars detained beyond free time averaged 16.76 per cent of the total placed in March, compared with 16.05 per cent for the previous month and 17.8 per cent for March, 1948.

Chinn Warns of "Pattern In Today's Events"

Development officers have "real selling job," he tells A.R.D.A.

"Is there a pattern in today's events? Is an effort being made to so handicap the railroads that solvency will be the exception rather than the rule?" These were leading questions raised by Armstrong Chinn, president of the Terminal Railroad Association of St. Louis, in his feature address at the fortieth annual meeting of the American Railway Development Association, held at Old Point Comfort, Va., April 20-23.

Characterizing as "dangerous" the idea that the government "can continue to subsidize other forms of transportation and expect the railroads to furnish the transportation which top army, navy and government officials have said repeatedly is essential to the nation's security," Mr. Chinn pointed out that from 1921 to 1947 over \$54 billion had been spent by various government agencies for construction and maintenance of waterways, highways and airways, and that "even greater expenditures are now pending."

"What Would Be the Cost?"

"Have you considered," he asked, "the cost to you if the railroads, by reason of these projects, and others, become insolvent? What will it cost you or your company if the railways are abandoned or, more likely, are taken over by the government? Would your city, or school district, or county, miss the taxes now paid?"

"There are many who seem to think the railroad problem has nothing to do

with them personally. But if present trends continue—if the rails continue to lose traffic to the subsidized carriers—and the government should move to seize the railroads—is it not on our shoulders that the increased property tax burden must fall? And . . . the burden of new taxation to pay the deficits that the government will incur in the operation of the railroads?

"If a pattern should be created in the seizure of the rails, that pattern will most surely be used for the seizure of other industry. . . . No one should witness a further injustice done the American railroads without the realization that the injustice, in the long run, is done to him."

Elsewhere in his address, Mr. Chinn "stuck his neck out" to say "that if we can weather the next few years we will enter another era of great industrial development," and told his audience that the future welfare of the railroads would depend "in no small measure" on their success "in selling the railroads to new shippers and in the development of territory along the railroads."

"A Real Selling Job"

"As decentralization of industry continues," he added, "and present plants and agricultural projects develop, the railroads must . . . have capable representatives in the field working to show agriculture and industry how they can use railroad transportation to their own advantage . . . This is a real selling job. You cannot expect anyone to buy railroad transportation unless that person is convinced that it is really to his advantage, in the long run, to use the rails."

Other features of the four-day meeting



In common with other railroads, the Union Pacific tackles the chore of preparing back-pay checks resulting from the recent retroactive wage increase granted 1,000,000 non-operating employees. Here a U. P. accounting department employee gazes pensively on 65,000 checks totaling \$2,851,000

included talks by Commander Raymond B. Bottom, publisher of the Newport News, Va., Times-Herald, and George W. Mitchell, director of finance for the state of Illinois; industrial, real estate and agricultural sectional meetings; an all-day tour to Williamsburg, Va., and a Hampton Roads harbor trip.

Retiring president C. H. Slayman, of Cleveland, Ohio, general industrial commissioner of the Chesapeake & Ohio, presided at the general sessions. Elected as president to succeed Mr. Slayman was Joe W. Jarvis, Omaha, Neb., supervisor of agricultural development, Union Pacific. Other newly elected officers included Lewis P. East, Richmond, Ind., general agricultural agent, Pennsylvania, first vice-president; Henry W. Coffman, Chicago, industrial agent, New York Central, second vice-president; and William A. Kleunder, St. Paul, Minn., forestry and agricultural agent, Chicago & North Western, secretary-treasurer.

T.A.A. Asks to Intervene In Reparations Cases

Justice Department takes "public be damned" attitude, says Conn

The public has a direct interest in the \$2 billion reparations cases against American railroads, because the result could be bankruptcy and government ownership for the railroads and serious dislocation for the entire economic system, the Transportation Association of America declared in a petition filed with the Interstate Commerce Commission on April 25.

The association moved to intervene in proceedings brought by the anti-trust division of the Department of Justice, which is seeking to recover more than \$2 billion for alleged over-payment on shipments of wartime goods during World War II. In an accompanying statement, Donald D. Conn, executive vice-president of the association, charged that "the anti-trust division seems perfectly willing to deliver a body blow to the enterprise system, and is not in the least disturbed by the prospect of driving the transportation system into government ownership. These proceedings have all the earmarks of a deliberate attempt to undermine the system of private capital."

Cites Facts of Case

The Justice Department, in its proceedings before the I.C.C., is claiming that railroads overcharged the government by billions of dollars during the war. The facts, as stated in the association's petition, are:

"That government shipments were handled by the railroads either at the same rates available to the public, or at lower rates as a result of special con-

tracts between the railroads and various government departments.

"That a large portion of the charges paid have already been returned to the government in payment of income and excess profits taxes.

"That during the years involved, the railroads earned an average of only 4.6 per cent on their net investment, which indicates no excess earnings."

The association's petition pointed out that it has no interest in one means of transportation over another, but "has a direct and continuing interest in the maintenance of a sound and economic transportation system, and accordingly in the soundness and stability of the carriers engaged in the various forms of transportation."

"It is a particularly inappropriate time for our government," the petition asserted, "which in case of war would be so vitally dependent upon the efficiency of the railroads for mass transportation, to assert a claim so great and so questionable."

In his statement, Mr. Conn predicted that the anti-trust division would object to the association's intervention. "The division evidently is not concerned about the public interest," he said. "First it sought to slap down the shippers—the users of transportation—by objecting to the intervention petition of the National Industrial Traffic League. Next it waxed indignant when the workers tried to participate, demanding that the Brotherhood of Locomotive Engineers be not permitted to take part in the proceedings. And then, it proposed to exclude the farmers, objecting when the California Farm Bureau Federation attempted to enter the case.

"The Public Be Damned"

"The public be damned, seems to be the attitude of the anti-trust division. But this association insists that the public has a stake in the enterprise system and in these cases. We propose to represent that public interest, just as we are in our continuing program to assure sound transportation policies. Should the reparations cases be lost, the cause of free enterprise will have suffered a body blow."

Clarence F. Lea, former chairman of the House committee on interstate and foreign commerce, and now director of governmental relations for the T.A.A., will represent the association before the commission. Hearings on the reparations cases, after several postponements at the request of the government, are scheduled to open in Washington, D. C., on June 21.

Royal Commission to Begin Hearings on May 2

Canada's recently created Royal Commission on Transportation will begin hearings at Ottawa, Ont., on May 2, for the purpose of formally opening its inquiry into Canadian transportation. Details as to the scope of its inquiry, its itinerary, and procedures to be followed

will be announced at the Ottawa sessions, which are expected to last two or three days.

Regional hearings in the various provinces and additional hearings at Ottawa will follow at later dates. Evidence from provincial governments, railroads and other interested parties will be received at these later sessions.

As reported in the *Railway Age* of January 8, page 256, the commission consists of Hon. W. F. A. Turgeon, envoy to Ireland, chairman, and Professors Henry F. Angus and Harold A. Innis of the Universities of British Columbia and Toronto, respectively, with J. L. Ilsley, former minister of finance and of justice, as counsel.

Transcontinental Motor Rate Increase Approved by I.C.C.

Division 3 of the Interstate Commerce Commission has approved a general increase of 9.09 per cent in transcontinental class and commodity rates of motor common carriers. The report in I.S. Docket No. M-2833 also found just and reasonable new westbound commodity rates whereby the truckers plan to bring their charges into line with the transcontinental rates of freight forwarders.

The latter adjustment will make the rates in some instances higher and in others lower than the rates resulting from the approved general increase. However, the two bases will alternate, the lower being applicable.

Supreme Court Ruling Fails To Clarify Basing-Point Issue

By a 4-to-4 decision, the United States Supreme Court this week affirmed a Circuit Court of Appeals ruling which upheld a Federal Trade Commission order outlawing use of the basing-point system of pricing by manufacturers of rigid steel conduit. There was no Supreme Court opinion, the court's action having been announced in a brief order which disclosed that Justice Jackson did not participate. Under the court's precedents, all decisions on which there is a tie vote affirm the lower-court rulings at issue.

It had been anticipated that the Supreme Court in this case might clarify the situation as to basing-point pricing which has been confused since that court's April 26, 1948, decision upholding F.T.C.'s "cease and desist" order against the cement industry's pricing system. That order was based on findings of conspiracy, and the court's ruling left unanswered the question of whether individual companies on their own initiative and without consultation with competitors, could lawfully use basing-point systems and absorb transportation costs to sell on a delivered-price basis.

That question was pointed up in the rigid-steel-conduit case, one count in the complaint having charged that the mere use of the basing-point method of pricing, with the knowledge that others in the same industry were using it, with

resultant uniformity of delivered-price quotations in any given market, constituted in and of itself an unfair method of competition in violation of the Federal Trade Commission Act. The complaint in the cement case contained no such count.

The confused situation resulting from the cement-case ruling, and now left unclarified, attracted the attention of Congress; and bills were introduced to legalize freight absorptions by sellers undertaking to reach distant markets. No action has been taken on those bills, and Congress recently has seemed more disposed to consider legislation of the stop-gap variety, i.e., to provide for a moratorium on new prosecutions of industries for absorbing freight and thus afford time for the framing of permanent legislation. Moratorium bills have been reported favorably from Senate and House judiciary committees. They are S.1008, the two-year moratorium proposal sponsored by Senator Myers, Democrat of Pennsylvania; and H. R. 2222, the 16-months proposal sponsored by Representative Walter, Democrat of Pennsylvania.

University of Tennessee to Offer Graduate Work in Transportation

An expanded study program leading to a master of arts degree in transportation and public utilities will be offered at the University of Tennessee at Knoxville for the first time this fall. A graduate seminar and nine new courses, including, among others, courses in railroad transportation and administration, motor carrier rates and administration, advanced traffic management and Interstate Commerce Commission law and procedure, will be available to students seeking the advanced degree during the 1949-1950 school year.

The new program, according to Professor William Way, Jr., department head, is an effort "to meet future needs of the transportation industry."

"Mountain Differentials" End July 1

By a two-to-one decision, the Canadian Board of Transport Commissioners last week ordered elimination by July 1 of the "mountain differential" rates on freight traffic to and from the province of British Columbia.

The board's decision is expected to reduce railway revenues about \$3,500,000 per year, at a time when they are seeking a general 20 per cent rate increase. The board rejected a railway proposal to compensate for loss of the higher differential rates by increasing rates across Canada generally by two per cent; and also turned down a suggestion to achieve parity between prairie and mountain rates by increasing the prairie rates to the mountain level rather than by reducing the mountain rates. The board's majority opinion expressed doubt that the railways would suffer any long-run financial loss; suggested that they

might "adjust depressed" competitive and commodity rates; and found that traffic volume in the affected areas left "no justification" for retention of the higher differential rates.

The mountain differentials were established on original completion of Canadian transcontinental lines in the last century to compensate the railroads for higher construction, operating and maintenance costs in mountain territory. In 1922 they were reduced from 1½ times the level of prairie rates to 1¼ times that level, and have remained on that basis until the board's recent decision.

Rough Handling Still Major Cause Of Shipper Dissatisfaction—Peters

"There are many reliable indications that the combined effort of shippers and railroads is gradually, but surely, winning the battle against loss and damage," Irving M. Peters, traffic manager of the Corn Products Refining Company and general chairman of the national management committee for the 1949 Perfect Shipping Campaign, told the Transportation Club of Buffalo, N. Y., on April 21. Among the reasons for his "optimism," Mr. Peters cited "the way shippers are flocking to the commercial box-testing laboratories for expert advice on their packaging," and "the wholesome attitude now shown by so many shippers in pooling their individual packaging problems in an industry-wide effort to produce a single standard of packaged-product performance that should answer for all items marketing the same general product."

At the same time, he warned, "The necessity for research, improvement, knowledge of what to do and how to do it, and getting the job done properly rests as importantly with the carrier as with the shipper. More shippers complain about rough handling of cars in switching than about any other deficiency of rail service. We know about the employee-training programs that are being carried on . . . No doubt those efforts are doing a lot of good. But the woeful fact is, the rough handling continues, and is resulting in heavy losses for the railroads, and much inconvenience and disappointment for receivers. If there is any one thing I would like to stress—and urge upon the operating and claim prevention departments of the railroads—it is the need for action which will really get results in this matter of rough handling."

Five Hundred at A.S.M.E. Oil and Gas Power Meeting

Approximately 500 members, guests and manufacturer's representatives registered for the twenty-first national conference of the American Society of Mechanical Engineers, Oil and Gas Power Division, at the Hotel Sherman, Chicago, on April 25 for four days of technical sessions. On the first day a lecture course on gaseous fluid flow in relation



The St. Louis-San Francisco recently placed in service this modern laundry at Springfield, Mo., permitting centralization of all the road's laundry operations. The structure measures 117 ft. by 56 ft. and contains storage space for dining car tableware equipment. The laundry equipment, of the latest design, is equipped with safety devices

to internal combustion engine design dealt in detail with the cooling of spark ignition engines, the fundamentals of air flow in Diesel-engine manifolds and the reduction of noise in engines.

There were five technical papers on design details of internal combustion engines and three papers of specific interest to railroad men. These were on the Diesel Locomotive Engine Cooling System, by F. H. Brehob, General Electric Co.; on a Training Program for Railroad Personnel, by George Y. Taylor, American Locomotive Company, and on Diesel Engine Maintenance Instruction—Alco V-type Engine, by S. E. Lodge, American Locomotive Company.

Among the inspection trips which those in attendance were able to make were tours to the new Diesel locomotive shops of the Chicago & North Western at Chicago, the Electro-Motive plant at La Grange, Ill., and the Beloit, Wis., shops of Fairbanks, Morse & Co. In connection with the meeting there was an exhibit participated in by Diesel engine and accessory manufacturers.

At a dinner on April 27, R. B. McColl, president of the American Locomotive Company, spoke on the railroads and their problems; Mr. McColl's address is reported in detail elsewhere in this issue.

Presidents' Day Will Be Feature Of Accounting Division Meeting

"Presidents' Day" will be a feature of the fifty-fifth annual meeting of the Accounting Division, Association of American Railroads, which will be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., from May 16 to 19, inclusive. Division Chairman R. E. Connolly, vice-president of the Illinois Central, called particular attention to this innovation in an April 27 circular which he sent along with the meeting's program, to division members.

The program sets aside May 16 for the usual "open-house" meetings of the division's various standing committees; and "Presidents' Day" will be May 17, the day on which the general meeting opens. It has been so designated, Mr.

Connolly explained, "in the thought that the exhibitions and demonstrations of modern office equipment and mechanical devices, designed to reduce the cost of providing current data for managerial and other necessary purposes, will be of prime interest to railroad presidents as well as to members of the division."

The division chairman also said that he had extended invitations to presidents of all Class I roads to attend this opening session. The principal speaker at the session will be Wayne A. Johnston, president of the I. C., who will discuss "The Value of the Accounting Department to the Railroad Industry." Mr. Johnston's talk will be preceded by an "address of welcome" by J. M. Symes, vice-president of the Pennsylvania.

What Mr. Connolly called "another feature" of the meeting will consist of talks by representatives of manufacturers of office machines and forms. Those talks, he said, will indicate the extent to which modern equipment "is now or will be available, . . . and the scope of research activities now in progress, looking toward further development of equipment of this character for use by the rail industry." Other proceedings of the meeting will include Chairman Connolly's address, which will be delivered at the closing session on May 19; the presentation of reports of the standing committees; and the election of officers. The meeting's agenda, a 319-page document containing the committee reports which cover approximately 225 subjects, is now being distributed to members by Division Secretary E. R. Ford.

A.T.A. Becomes N.D.T.A.

The Board of Directors of the Army Transportation Association at a meeting in Washington, D. C., on April 26, changed the name of the association to the National Defense Transportation Association. Harry F. Chaddick, of Chicago, president, said the change had been contemplated for some time in view of the trend toward unification of the armed forces.

In a telegram to Louis A. Johnson,

secretary of defense, informing him of the change and promising continued support, Mr. Chaddick said that the association supports unification and that "the world-wide membership desires to make it abundantly clear that a transportation association in the interest of national defense must encompass all phases of civilian transportation as well as all segments of our national defense forces."

Organized during the war to perpetuate and further the science of military transportation, the association has 38 Chapters in principal cities of the United States as well as in Germany, Japan, the Philippine Islands, Alaska, Guam, Hawaii, and Puerto Rico.

To Study New York Area Transportation Situation

A committee of New York city and suburban county officials and railroad representatives has been formed to investigate methods of developing an integrated transportation system in the New York region. The fundamental objective of the group will be to explore methods whereby the present heavy load on the facilities of Grand Central Terminal and Pennsylvania Station can be relieved by diverting some of the commuter traffic from Long Island, Westchester County and Connecticut to municipal transportation lines.

At present the committee consists of Richard E. Dougherty, former vice-president of the New York Central;

HEAD ON!

Should these collectivists succeed in their efforts to hamstring the power industry and to take over great rail systems, having enfeebled them by part-time subsidized competition, does anyone doubt they would move on to new conquests? Savings banks and insurance companies are likely targets. The greed of the collectivists has by no means been abated by their partial ventures into those fields. The mutual life insurance companies and savings banks are tremendous holders of securities in the power and railroad industries.

A rear-guard action, however adroitly maneuvered, is apparently no longer the answer. The public-ownership movement must be countered now—head on. . . . Many outstanding labor men are your allies. They not only know the multiple purposes to be served by public power works but also are cognizant of the multiple tax scheme that makes those works possible; a scheme which has become the staff of life for the march toward socialism. It enables the collection of enormous funds with which to build collectivist projects that, like the St. Lawrence, couldn't pay their own way.

—From an address to the Maryland Utilities Association at Baltimore, April 22, by Carroll B. Huntress, chairman of the National St. Lawrence Project Conference.

Ernest C. Nickerson, vice-president of the New York, New Haven & Hartford; William Reid, chairman of the New York City Board of Transportation; Transportation Commissioner Sidney H. Bingham; Custavus T. Kirby, chairman of the Westchester County Planning Commission; and David Rockefeller, youngest son of John D. Rockefeller, Jr. It is expected the committee will be enlarged to include representatives of the Long Island; and of Nassau and Suffolk counties. Governor Dewey also will be asked to name a member to the committee.

Hearing June 2 on Pact Covering Car Hire, Demurrage, Storage, Rules

The Interstate Commerce Commission has set June 2 as the date for hearing at Washington, D. C., on the Bulwinkle-Act application filed by railroad parties to car-hire, demurrage, and storage rules which are administered through the Association of American Railroads. The hearing will be held before Examiner George J. Hall. The proceeding is docketed as Section 5a Application No. 7 (see *Railway Age* of January 15, page 41).

Santa Fe to Sponsor Video Show

The Atchison, Topeka & Santa Fe has announced plans to present a television program featuring Burton Holmes, noted world traveler and lecturer. The show will not be on a network but is to be televised weekly from Chicago, New York and Boston, Mass. Special films for the programs are now being planned.

In announcing the arrangement, J. J. Grogan, vice-president — traffic, said: "Holmes is the modern Marco Polo and the ideal choice to interpret the historic and scenic wonders that abound in Santa Fe's territory for the television audience. Santa Fe's plan is to bring the American public greater knowledge of, and pride in their country, and to do it in an entertaining fashion."

C. N. J. Celebrates Hundredth Anniversary of Incorporation

Last Saturday marked the one hundredth anniversary of the incorporation, on April 23, 1849, of The Central Rail Road Company of New Jersey, still in existence as an operating company, but more familiarly known today as the Jersey Central Lines.

The anniversary might have been observed 18 years ago, according to a historical supplement included in the April issue of *The Coupler*, company employee magazine, which states that the Elizabethtown & Somerville, a Jersey Central forerunner, was incorporated in 1831. "Or," *The Coupler* continues, "we might have been justified in claiming the year 1818 as the date from which to reckon our centenary, for that year saw the opening of the Elizabethport & New York Ferry Co., oldest corporation in the Jersey Central family. But April

23, 1849, is the day the Jersey Central became the 'Jersey Central'."

"Unlike many of America's early railroads, which were built from the sources of raw materials toward tidewater, Jersey Central Lines reversed this process of development. The railroad grew out of a ferryboat operation and was built from the industrial center of New Jersey—Elizabethtown (now Elizabeth)—toward the sources of raw materials."

The original Elizabethtown & Somerville began operation by horse-car between the New York ferry dock at Elizabethport and Elizabethtown in 1836, began steam operation to Plainfield in 1839, and reached Somerville in 1842. It was reorganized in 1846 and sold in 1849 to the Somerville & Easton, which had been incorporated in 1847 to build a railroad from Somerville to the Delaware river opposite Easton, Pa. The incorporation of the present company was a direct result of the consolidation resulting from this sale.

Other highlights of Jersey Central history have included:

1852—Line opened to Phillipsburg, N. J., opposite Easton.

1864—Bridge over Newark bay completed, and ferry service between Jersey City, N. J., and New York established on approximately its present basis.

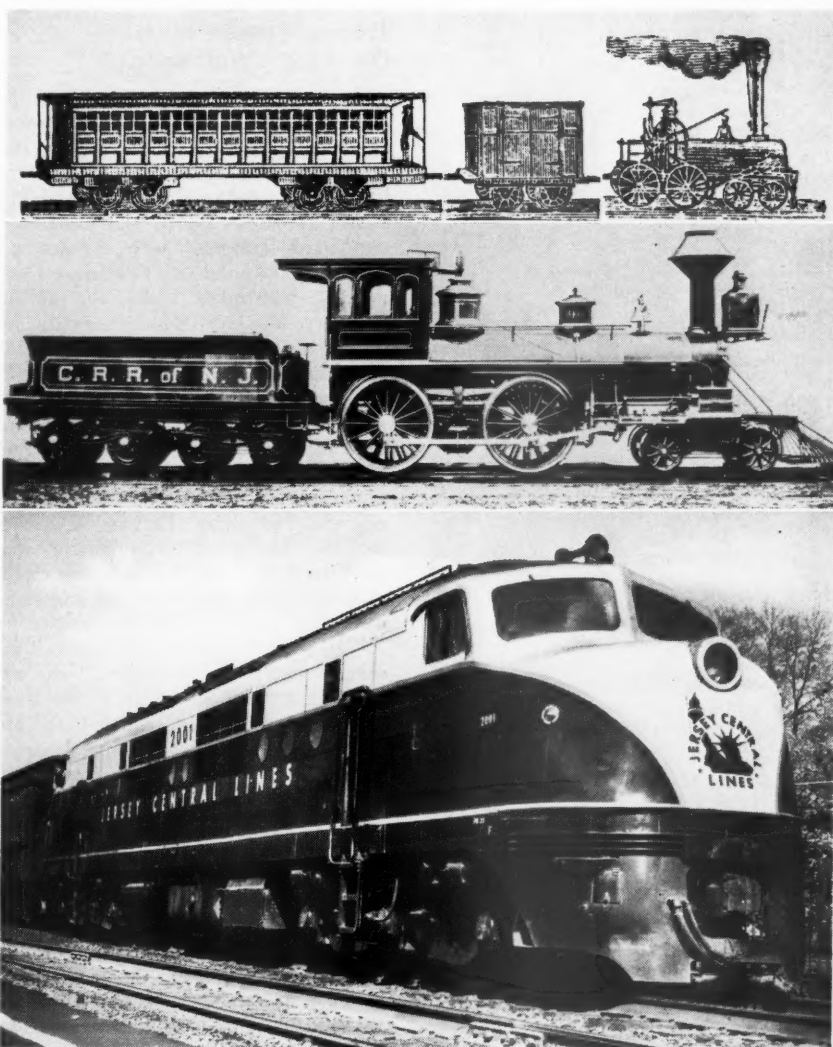
1868—Connection made with Lehigh & Susquehanna at Phillipsburg, establishing through route from New York to Wilkes-Barre, Pa.

1871—Lehigh & Susquehanna leased for 999 years from Lehigh Coal & Navigation Co., providing continuous line to Wilkes-Barre.

1882—New Jersey Southern acquired through purchase of securities, extending C. N. J. operations through central and southern New Jersey to Delaware bay.

1893—Automatic semaphore signal, said to be the first used anywhere in the world, installed at Black Dan's cut near Phillipsburg.

1925—300-hp. Diesel-electric switching



Top: The Jersey Central's first train—a locomotive, a wood car, and one coach. The locomotive, the 9-ton "Eagle," built by Baldwin, went into service between Elizabethport, N. J., and Plainfield on January 1, 1839, and ran for at least 10 years. Middle: No. 96, passenger locomotive built in 1868. Bottom: Modern Diesel-electric passenger locomotive built in 1946

locomotive, believed to have been the first Diesel on any American railroad, put into service. Still in daily use in 1949 at the railroad's Bronx terminal yard in New York City.

1939—Petition for reorganization filed under federal bankruptcy laws, principally because of heavy New Jersey taxes.

1946—Pennsylvania properties transformed into the Central Railroad Company of Pennsylvania, as a wholly owned subsidiary and operating carrier, to stop the state of New Jersey from taking in taxes earnings from Pennsylvania operations.

1949—Reorganization plan approved by Interstate Commerce Commission, subject to acceptance before August 2 by 75 per cent of each class of security holders.

A.A.R. Gets "Silver Mike" Award for Radio Show

The Railroad Hour, musical radio program presented each Monday evening by the Association of American Railroads on the American Broadcasting Company network, has received the "silver mike" award of Radio Best Magazine for "consistent excellence of performance and public service to radio listeners." William T. Faricy, president of the A.A.R., received the award from Edward Bobley, editor of the magazine, between the acts of Victor Herbert's "The Fortune Teller" on the April 25 Railroad Hour.

In making the award for his magazine, Mr. Bobley congratulated the American railroads "for providing such high type entertainment for the homes of America." Mr. Faricy expressed appreciation for the silver mike on behalf of the 132 railroads which sponsor the Railroad Hour, and paid tribute to "the performers, writers and technicians whose talents and efforts brought this distinction to our program."

New Haven Goes After Summer Commuter Travel

A new, low-priced, 10-ride experimental commuter ticket, good for any calendar week ending on Saturday, between any two New York, New Haven & Hartford stations in Massachusetts, will be sold from May 22 until September 10. Henry F. McCarthy, vice-president, traffic, said the new tickets are "designed to stimulate regular train travel between our stations in Massachusetts and especially to permit those whose families spend the summer on the South Shore, on Cape Cod, or at any other resort in Massachusetts served by the New Haven, to be at their favorite resort every night at less cost than if they buy dinner each evening at restaurants in town."

The price reductions are described as "startling"; for instance, Mr. McCarthy pointed out, 10 rides at the regular one-way fares, including tax, between Boston and Hyannis cost \$27.60, but 10 rides

on the new weekly ticket will be only \$10.60.

"The new tickets," Mr. McCarthy added, "are primarily designed to win back for the former Old Colony lines those summertime commuters who have been steadily deserting the trains for the highways. Commencing on May 23 we shall start operation of the 'Cranberry,' a fast commuter express train, Mondays to Fridays inclusive, which will leave South Station (Boston) at 4:50 p.m. and make the run to Hyannis (79 mi.) in less than two hours, with through cars to and from all stations on the Woods Hole branch. It will arrive back in South Station at 8:55 in the morning.

"Scores of those who have deserted the trains for the highways have told us that if we would provide better service, at lower fares, they would rather commute by train. This new ticket, coupled with the best train service we have offered on the Cape during the summer for many years will, we hope, insure the return to the trains of many of those who have left them."

Truman Bestows Medal On A.C.L. Watchman

For rescuing an elderly man from the path of a train, Fred Hinds Chamberlin, an Atlantic Coast Line watchman, has been awarded a medal of honor bestowed upon him by President Truman. The award, recommended by the Committee on Award of Medals of Honor and approved by the Interstate Commerce Commission, was made under the act of February 23, 1905, which provides for bronze medals of honor in recognition of outstanding feats of bravery connected with saving of life upon railroads.

The I.C.C.'s announcement of the award said it was based upon the rescue of Karl I. Brook from an A.C.L. track upon which a passenger train was approaching near St. Petersburg, Fla., on November 9, 1948. Mr. Chamberlin noticed that Mr. Brook, as he reached the center of the track, became confused and stood motionless on the track.

"Crossing Watchman Chamberlin," the commission's notice continued, "who was standing on the north side of the track some distance away, shouted to Mr. Brook, discovered his paralyzed condi-

"MAN BITES DOG"

A tractor and "lowboy" trailer failed to clear a grade crossing in St. Paul, Minn., on October 22, 1947, and were struck by a passenger train of the Minneapolis, St. Paul & Sault Ste. Marie. The construction company which owned the equipment sued the railroad for \$3,700. On April 20, 1949, however, the firm had cause to regret its action. The verdict of the district court gave the plaintiff nothing, but awarded the Soo Line \$1,368 for damages to its locomotive and coaches.

tion, ran ahead of the approaching train and lifted Mr. Brook from the track, clearing the front of the locomotive by only a few inches. The train was brought to a stop with the locomotive about 50 feet beyond the point where Mr. Brook had been standing. In accomplishing this rescue, Mr. Chamberlin exhibited extreme daring and endangered his own life.

Mr. Chamberlin's medal was the sixty-first award since enactment of the act.

Railroads Ready to Move Government-Loan Grain

More than 17,000 box cars have been assembled by the railroads at country loading stations in the Southwest and the Northwest to handle the anticipated heavy movement of grains on which government loans expire April 30, Arthur H. Gass, chairman of the Car Service Division of the Association of American Railroads, said on April 25. "The railroads are prepared to move every bushel of grain for which storage is available at sub-terminal or terminal elevators or at ports for export, Mr. Gass declared.

He explained that this is not newly harvested wheat, but old grain held over from last year's crop on farms and at small elevators by farmers and the government under purchase and loan agreements. He went on to point out that extensive arrangements have been made by the railroads to move grain now being held because government loans expire simultaneously in the heavy producing areas just ahead of the new harvest which starts in mid-May. "It is imperative that as much old grain as possible be moved to make room for the new crop," Mr. Gass added.

T. & P. Goes "A'Fishing" for Business with Telephone Line

W. W. Fair, passenger traffic manager of the Texas & Pacific, is firmly convinced that a railroad's "hottest" customer prospect is the person who makes a telephone inquiry; he recently conducted, for T. & P. representatives, a condensed correspondence course in "fishing for business by telephone."

Mr. Fair's initial sales letter to representatives dismissed the technique of "baiting the hook." He stated: "In baiting the hook, we can use our answer to the first customer inquiry as the lure. Put a little something in the answer. Just enough to draw additional information voluntarily from the customer. Like this: 'Why, Mr. Jones, our eastbound Eagle leaves at 6:15 p.m. Could we make a hotel reservation for you in Chicago?'"

The following week's letter concerned "making the catch." It said: "According to the customer's particular needs, a brief discussion of the types of accommodations available over his planned route often makes the catch. And, by the way, has anyone mentioned recently to a customer the easy-on-the-eyes reading light directly over the the heads of our

Eagle beds? . . . or the individually controlled heating and cooling system? . . . or the airfoam mattresses? . . . or our new de luxe reclining seat Eagle coach equipment? . . . or credit cards? . . . or a hundred other little things that count in the minds of transportation buyers?"

Mr. Fair in his third letter supplied pointers on the "follow-through." "The follow-through is just as important to a sale made as to a sale lost. Being sure to get the caller's name and telephone number enables us either to phone later to inquire about the trip we sold him, or to check back in a couple of weeks and diplomatically find out if another trip he is planning wouldn't yield a sales for us."

The sales letter drew from T. & P. representatives the following suggestions on "fishing for business by telephone": (1) Cultivate the habit of identifying your company and yourself; (2) hang up gently, don't bang up; (3) a final "thank you" is due the customer, not us—the customer does us the favor by calling; (4) never let your voice register impatience or indifference; (5) in cases of misunderstanding or dispute, be a diplomat; (6) be a good listener . . . people with something to say usually like to be heard . . . then you can start talking; and (7) talk with enthusiasm . . . like you meant it and believed it yourself—you've got to be sold yourself before you can sell others."

The T. & P.'s passenger traffic manager points out that the telephone is one of the most potent but probably least-used ways of getting people to use railroad services. A potential customer might have a slight, mild or intense interest in buying transportation, and the way he is handled decides whether the cash register pops up the dollar mark or the no-sale sign, states Mr. Fair.

Waybill Studies

Four additional waybill studies have been issued recently by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. They are:

Statement No. 498, State-to-State Distribution of Tonnage by Commodity Groups—Terminations in Third Quarter of 1948.

Statement No. 499, Distribution of Freight Traffic and Revenue Averages for Commodity Groups and Selected Classes by Rate Territories—Terminations in Third Quarter of 1948.

Statement No. 4910, Distribution of Freight Traffic and Revenue Averages in the Products of Mines Group, by Commodity Classes and Rate Territories—Terminations in 1947.

Statement No. 4911, Distribution of Freight Traffic and Revenue Averages in the Products of Forests Group, by Commodity Classes and Rate Territories—Terminations in 1947.

Dismisses "Holdout Ops'" Appeal from Strike Ban

Because the controversy "has become moot," the United States Court of Appeals for the District of Columbia, on April 25, dismissed the appeal whereby railroad operating unions involved in the May, 1948, strike threat sought to have set aside the injunction which barred their proposed walkout after the

government had seized the railroads. The unions were the Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen & Enginemen, and Switchmen's Union of North America.

The injunction was obtained by the government from Justice T. Alan Goldsborough in the United States District Court for the District of Columbia. After the unions and management settled their wage and rules dispute, the government relinquished control of the roads; and the Department of Justice moved for dismissal of the injunction. Judge Goldsborough denied the motion, thus upholding the brotherhoods' contention that they should have full opportunity to test the injunction's legality in appeals to higher courts.

The government appealed to the Court of Appeals, and the brotherhoods countered with a maneuver whereby they undertook to by-pass that court. They filed in the United States Supreme Court a petition asking that tribunal to rule directly on the Goldsborough injunction. The Supreme Court denied the petition (see *Railway Age* of November 20, 1948, page 218). Thus the case remained with the Court of Appeals from which the present decision has come. That decision vacated the injunction and remanded the case to the district court with instructions to dismiss the complaint.

Santa Fe Fined \$2,000

The Interstate Commerce Commission has been advised that the Atchison, Topeka & Santa Fe was fined a total of \$2,000 in the United States District Court at Fresno, Cal., on April 18. The fine was imposed after the road entered a plea of nolo contendere to six counts of an information consisting of 10 counts charging violation of the Elkins Act arising out of its failure to observe the provisions of its tariffs. The remaining four counts were dismissed.

The specific offenses, according to the notice issued by the commission, were the failure to assess an additional 10 per cent charge on carload minimums of livestock shipments which had not been weighed nor weight certificates furnished by the shipper, and unlawfully extending credit to shippers.

C. & E. I. Bows Out of Chicago-St. Louis Passenger Business

Discontinuance on April 21 of the "Cardinal," Chicago & Eastern Illinois daily passenger train between Chicago and St. Louis, Mo., marked the termination of that road's passenger service between the two cities. The railroad first petitioned the Illinois Commerce Commission in November, 1948, for permission to eliminate the "Cardinal," pointing out that the train was being operated at a loss of approximately \$300,000 a year. A commission order issued April 1 authorized the discontinuance.

John M. Budd, president of the C. & E. I., pointed out that the train's equip-

ment had been modernized, its operating schedule improved and that the railroad had spent a considerable amount of money to offer the best service possible. Lack of patronage, however, made it impossible to continue the run, he asserted.

Erie Inaugurates Use of Cleveland Union Terminal

The Erie on April 24 inaugurated all-Diesel passenger service between Cleveland, Ohio, and Pittsburgh, Pa., and a new right-of-way enabling its passenger trains to use the Cleveland Union Terminal. More than 400 civic and industrial leaders from the Cleveland, Youngstown and Pittsburgh areas attended ceremonies and a luncheon on April 20 at which the new service and facilities were dedicated.

"Until Diesel locomotives were perfected it was economically impossible for the Erie to use the Union Terminal," Robert E. Woodruff, president of the road, said in explaining the Erie's abandonment of its downtown Cleveland station. "The costs of electrification of the Erie route, expenses for operating with an extra crew on the C.U.T. and other details prohibited the move when the terminal opened in 1930. It cost the Erie more than a million and a half dollars



Mrs. Elizabeth Stevenson, daughter of R. E. Woodruff, president of the Erie, christening an American Locomotive-General Electric 4,000-hp. Diesel-electric locomotive in Cleveland, Ohio, on April 20 during ceremonies connected with the Erie's preview trip over new track into the Cleveland Union Terminal. A bottle of smoke, symbolizing the passing of steam locomotive service from Cleveland switching and passenger operations on the Erie, was used for the christening

to make possible the event we are celebrating today. This money went for building a new right-of-way, the purchase of five Diesel locomotives and other miscellaneous expenses. We believe the money was spent wisely and the investment will increase our business."

Selected Income and Balance-Sheet Items of Class I Steam Railways

Compiled from 128 reports (Form IBS) representing 132 steam railways
(SWITCHING AND TERMINAL COMPANIES NOT INCLUDED)

Income Items	United States For month of January	
	1949	1948
1. Net railway operating income.....	\$33,244,479	\$41,297,149
2. Other income.....	18,296,255	19,405,916
3. Total income.....	51,540,734	60,703,065
4. Miscellaneous deductions from income.....	3,623,935	3,845,208
5. Income available for fixed charges.....	47,916,799	56,857,857
6. Fixed charges:		
6-01. Rent for leased roads and equipment.....	8,107,219	9,789,490
6-02. Interest deductions ¹	24,554,448	24,343,750
6-03. Other deductions.....	167,525	143,235
6-04. Total fixed charges.....	32,829,192	34,276,475
7. Income after fixed charges.....	15,087,607	22,581,382
8. Other deductions.....	3,203,638	3,239,214
9. Net income.....	11,883,969	19,342,168
10. Depreciation (Way and structures and Equipment).....	32,667,270	30,112,091
11. Amortization of defense projects.....	1,380,527	1,368,598
12. Federal income taxes.....	18,752,995	23,863,324
13. Dividend appropriations:		
13-01. On common stock.....	6,401,595	3,158,609
13-02. On preferred stock.....	4,667,659	2,325,748
Ratio of income to fixed charges (Item 5 ÷ 6-04).....	1.46	1.66
Balance at the end of January		
1949 1948		
17. Expenditures (gross) for additions and betterments—Road.....	\$23,384,895	\$20,726,640
18. Expenditures (gross) for additions and betterments—Equipment.....	84,799,732	64,842,887
19. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707).....	519,346,861	580,784,188
20. Other unadjusted debits.....	127,454,810	160,235,748
21. Cash.....	872,259,915	940,536,460
22. Temporary cash investments.....	1,066,790,074	966,973,791
23. Special deposits.....	126,109,182	143,521,075
24. Loans and bills receivable.....	5,272,289	12,629,717
25. Traffic and car-service balances—Dr.....	52,546,769	52,929,167
26. Net balance receivable from agents and conductors.....	127,255,515	121,301,493
27. Miscellaneous accounts receivable.....	328,643,597	330,478,095
28. Materials and supplies.....	367,561,404	771,988,619
29. Interest and dividends receivable.....	12,977,696	13,551,826
30. Accrued accounts receivable.....	157,268,282	174,313,359
31. Other current assets.....	39,366,812	39,580,648
32. Total current assets (items 21 to 31).....	3,656,051,565	3,567,807,450
Selected Liability Items		
40. Funded debt maturing within 6 months ²	\$204,610,153	\$125,934,862
41. Loans and bills payable ³	4,341,352	4,035,000
42. Traffic and car-service balances—Cr.....	79,736,360	92,353,662
43. Audited accounts and wages payable.....	523,223,149	529,428,250
44. Miscellaneous accounts payable.....	233,182,579	235,941,059
45. Interest matured unpaid.....	35,579,094	47,076,289
46. Dividends matured unpaid.....	7,547,870	7,247,335
47. Unmatured interest accrued.....	81,708,412	75,537,330
48. Unmatured dividends declared.....	32,325,313	18,578,571
49. Accrued accounts payable.....	223,601,394	180,075,441
50. Taxes accrued.....	796,389,302	699,716,207
51. Other current liabilities.....	80,549,878	110,126,502
52. Total current liabilities (items 41 to 51).....	2,098,184,703	2,000,115,646
53. Analysis of taxes accrued:		
53-01. U. S. Government taxes.....	664,505,082	576,167,661
53-02. Other than U. S. Government taxes.....	131,884,220	123,548,546
54. Other unadjusted credits.....	279,213,321	343,130,747

¹ Represents accruals, including the amount in default.

² Includes payments of principal of long-term debt (other than long-term debt in default) which becomes due within six months after close of month of report.

³ Includes obligations which mature not more than one year after date of issue.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission.
Subject to revision.

U. S. Supreme Court Reverses Mail-Pay Ruling of Claims Court

The United States Supreme Court has reversed a decision of the United States Court of Claims which awarded the Georgia & Florida mail pay higher than that fixed by the Interstate Commerce Commission and paid by the Post Office Department for the period from April 1, 1931, through February 28, 1933. The issue was the application to the G. & F. of the general basis of mail pay fixed by the commission on July 10, 1928.

The Supreme Court's determination covered two cases—the government's appeal from the Court of Claims ruling, and the appeal of the G. & F. receiver

who contended that the Claims Court should have added interest to the amount awarded. The controversy was previously before the Supreme Court in *United States v. Griffin*, 303 U. S. 226, a case involving the G. & F.'s appeal from the ruling of a special three-judge court, which upheld the commission's refusal to find that the road was entitled to mail pay higher than the general basis.

In disposing of that controversy, the Supreme Court did not pass on its merits, but held that the commission order involved was not of the type reviewable by special three-judge courts. It went on to say that its ruling did not "preclude every character of judicial review," and to suggest that "if the com-

mission makes the appropriate finding of reasonable compensation but fails, because of an alleged error of law, to order payment of the full amount which the railroad believes is payable under the finding, the Court of Claims has jurisdiction of an action for the balance, as the claim asserted is one founded upon a law of Congress." The court suggested further that suit would also lie under the general jurisdiction of the federal district courts, which have jurisdiction of every suit "arising under the postal laws."

The G. & F. receiver elected to go to the Court of Claims, and that court awarded \$186,707 on the basis of findings that this additional amount was required to make the road's mail pay compensatory on the basis of the cost formula used by the commission in its decision. In making the award, the Claims Court relied on the above-quoted language from the Supreme Court's decision in the Griffin case. In setting the award aside, the Supreme Court quoted statements whereby the Claims Court had undertaken to justify its acceptance of jurisdiction, and then made this comment:

"The Court of Claims, though asserting the contrary, has not 'given effect' to the rate order, but in the guise of finding 'error of law' has set it aside, together with the commission's findings; has substituted 'findings' of its own; and has made, in effect, a new order by its judgment. It follows, in our view of what was intended by the Griffin statement, that the Court of Claims had no jurisdiction in this case, since it involves no such 'error of law' as that statement contemplated, but relates only to questions essentially of fact going to the order's appropriateness on the merits."

In closing, the Supreme Court suggested that, in cases of the kind involved, the federal district courts would comprise a more logical place to seek relief than the Court of Claims. It found support for this suggestion in provisions of the Administrative Procedures Act, adopted since the Griffin case was decided. "These suggestions," the court added, "are not strictly necessary for disposition of this case. But we think them appropriate in order to prevent a recurrence in the future and in other cases of long and chiefly jurisdictional litigation such as this case has involved with profit to no one."

The court's opinion was by Justice Rutledge; Justices Reed and Jackson took no part in the consideration or decision of the case.

Pennsylvania's New York Division Transferred to Eastern Region

Effective May 1, the New York division of the Pennsylvania will be incorporated with that company's Eastern region. The New York division, which includes generally the Pennsylvania's main line between New York and Philadelphia and other lines in northern New Jersey, was formerly a part of the company's New

York zone, which had also included the Long Island. The change in jurisdiction, announced following a meeting of the Pennsylvania board of directors on April 27, reflects the recent separation of Long Island operations from the Pennsylvania as a result of establishment of trusteeship for the Long Island, as reported in *Railway Age* of March 5, page 60.

Announcement of the change emphasized the fact that it was made solely in the interest of greater operating efficiency. The changes, the announcement said, "will not affect the public in any way, nor will they affect the representation of the P.R.R. in New York, nor the importance and character of the Pennsylvania's interest in the metropolitan area." H. H. Pevler, now vice-president of the New York zone, will continue as vice-president in New York, as the responsible and authoritative Pennsylvania executive in that area.

Newly Equipped "Liberty Limited" Placed in Operation by P.R.R.

The Pennsylvania's newly equipped "Liberty Limited" was placed in operation between Washington-Baltimore and Chicago on April 26. The dining and observation cars, and Pullman and coach lounge cars, have been completely redesigned, as have the drawing rooms, compartments, bedrooms, duplex rooms, and roomettes in the sleeping cars. The reclining seat coaches also exhibit what the P.R.R. considers "marked advances contributing to more restful travel at low cost."

The two trains required for the service cost, with their locomotives, \$4,276,600. This compares with a cost of \$584,800 for the two then modern trains with which the service was inaugurated in 1923.

Three new type bedrooms, for one or two passengers, offer a choice of arrangements for day and night use of beds across or lengthwise of the car and also may be occupied en suite when the separating partition between adjoining rooms is folded away. For the first time on a train serving Washington or Baltimore, twin beds are provided when adjoining new type "parallel" bedrooms are occupied en suite. Each sleeping room with accommodations for more than one passenger has a separate toilet annex having complete lavatory facilities, and single occupancy rooms have improved lavatory facilities folding away out of sight when not in use. Section-type cars are also provided.

The new equipment includes twin-unit dining cars in the development of which the Pennsylvania pioneered, seating 68 passengers. There are three lounge cars—Pullman mid-train lounge, observation lounge and coach lounge.

The P.R.R. said the "Liberty" is one of the first of its trains to be re-equipped with new cars since the war, and "they went into service as received from the builders to give patrons progressively improved accommodations." New cars "are

S. P. RETALIATES AGAINST AIR LINES' "WHOPPERS" ON COMPARATIVE FARES.—A thoroughly provoked Southern Pacific recently published this newspaper advertisement in which it pointed out to the public obvious advertising mis-statements by the air lines concerning fares on its "Daylights." The S. P. advertisement states, in part: "The other day United Airlines ran . . . a comparative ad giving the travel time of the fastest train to Los Angeles (our Daylight), but quoted the one way fare (including lower berth) as \$20.67. The Daylights carry no sleeping cars (neither do the planes) and the one way fare is \$7.50, round trip \$13.50, plus tax. . . . Western Air Lines has been advertising 'lowest fares on the coast' but they tell us they mean just air fares. That's all right with us as long as you understand rail fares are lower. . . . We're proud of our Daylight streamliners and we think their fares are a bargain. And you don't have to take a long bus ride at each end of the trip at \$1.25 per copy. . . ."

now being received in good volume under the Pennsylvania's \$217,000,000 postwar equipment improvement program, and are going into immediate service on other principal trains until they, too, shall be completely new," the statement added.

Electric power moves the new "Liberty" over its entire route, with electric locomotives south of Baltimore, and Diesel-electrics west of that city.

Service and Schedule Changes Inaugurated on April 24

Coincident with the inauguration of Daylight Saving Time on April 24, the Illinois Central discontinued a number of suburban trains in a move to offset a decline of some 12 per cent in traffic volume. The railroad, which formerly operated 418 electric suburban trains daily, cut off 55 daily, 65 Saturday and 21 Sunday trains. The reduced service affects principally the road's South Chicago branch, where trains during non-rush hours now run every 20 minutes instead of every 10 minutes.

Schedule changes which became effective April 24 included the following: The Boston & Maine's "Ambassador" from Montreal, Que., makes the run from White River Junction, Vt., to Boston, Mass., in 3 hr. and 35 min., a reduction of 25 min. The New York, New Haven & Hartford announced a general speed-up of its service between New York and Springfield, Mass., with trains making the run from 8 to 12 min. faster. The Pennsylvania's all-Pullman "General" between New York and Chicago was quickened 30 min. eastbound and 15

Air line executives are nice people and we like 'em, but —we wish they'd stand in the corner and write on the blackboard 100 times:

\$750 on the Daylights to L.A.

Maybe then they'd remember what our correct fare is.

You see, our airline friends think it's good advertising to make direct comparison with their competitors' fares and services. But unfortunately for us they get mixed up somehow and quote railroad fares as such a way as to make railroad travel seem higher than they really are. Probably just absent-mindedness of course.

The other day United Airlines ran such a comparative ad giving the travel time of the fastest train to Los Angeles (our Daylight), but quoted the one way fare (including lower berth) as \$20.67. The Daylights carry no sleeping cars (neither do the planes) and the one way fare is \$7.50, round trip \$13.50, plus tax.

The California Central Airlines have been running radio announcements quoting our coach fare on the Daylights as "almost nine bucks." The fare, we repeat, is \$7.50. They apparently have a passion for round numbers, adding \$1.50 to our fare to make it come out even. However, they quote their own fare to the cent. We raised a question as to these announcements and, in fairness to the airline, we must say that they have agreed to be more exact.

Western Airlines has been advertising "Lowest Fares on the Coast" but they tell us they mean just air fares. That's all right with us as long as you understand rail fares are lower.

T. W. A. has been running advertising making the point that planes are faster, and comparing specific air and rail schedules. We counted long ago that planes can make more miles per hour than the train so we think their effort is a little laborious. But we think the train has some advantage, too.

This is the second time in our history that we have referred directly to airlines in our advertising. The first time was for the same reason—to correct airline advertising mis-statements regarding railroad service.

We're proud of our Daylight streamliners and we think their fares are a bargain. And you don't have to take a long bus ride at each end of the trip at \$1.25 per copy. So we hope you'll pardon our mild squawk at the airline's unintentional inaccuracies.

CLAUDE E. PETERSON,
Vice President
System Passenger Traffic

S-P The friendly Southern Pacific

min. westbound. The P.R.R. "American's" schedule was speeded up by one hour from St. Louis, Mo., to New York, and 45 min. to Washington, D. C. The "Manhattan Limited" is 45 min. faster from Chicago to Washington, and 20 min. faster to New York. The "Red Arrow" is 25 min. faster from Detroit, Mich., to New York and 10 min. faster westbound. The "Spirit of St. Louis" is 35 min. faster from St. Louis to Washington and 20 min. faster to New York, while the "Cincinnati Limited" is now 20 min. faster to New York.

N.Y.C. Begins Rail-Truck L. C. L. Service in Illinois

Faster less-than-carload freight service, using highway tractor-trailers in coordination with rail service, and saving one or more days in transit, was inaugurated on April 28 by the New York Central between 100 stations in Illinois. This improved L.C.L. service will be extended throughout Indiana in May. In Ohio, inauguration of similar service is awaiting approval by the state's Public Utilities Commission. In these three states the road plans to use the new service for 400 stations, daily except Sundays and holidays. The Interstate Commerce Commission already has approved its interstate operation.

Freight Car Loadings

Loadings of revenue freight in the week ended April 23 totaled 769,336 cars, the Association of American Railroads announced on April 28. This was an increase of 3,446 cars, or 0.4 per

cent, over the preceding week, a decrease of 82,590 cars, or 9.7 per cent, under the corresponding week last year, and a decline of 124,376 cars, or 13.9 per cent, under the equivalent 1947 week.

Loadings of revenue freight for the week ended April 16 totaled 765,890 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

Revenue Freight Car Loadings For the week ended Saturday, April 16			
District	1949	1948	1947
Eastern	139,076	142,145	165,009
Allegheny	166,869	152,205	189,691
Pocahontas	65,479	51,318	67,877
Southern	119,089	132,646	133,458
Northwestern	109,418	122,644	120,870
Central Western	109,605	116,229	124,903
Southwestern	56,354	67,424	63,946
Total Western Districts	275,377	306,297	309,719
Total All Roads	765,890	784,611	865,844
Commodities:			
Grain and grain products	42,850	38,780	48,436
Livestock	8,947	14,030	14,039
Coal	157,716	129,931	185,731
Coke	14,894	9,699	14,137
Forest products	36,230	41,764	43,100
Ore	63,957	64,510	50,503
Merchandise l.c.l.	94,870	109,344	126,456
Miscellaneous	346,426	376,553	383,442
April 16	765,890	784,611	865,844
April 9	757,784	682,934	757,839
April 2	725,623	660,631	715,159
March 26	596,329	663,663	829,392
March 19	607,767	699,593	844,041
Cumulative total 15 weeks	10,478,938	11,293,157	12,169,147

In Canada.—Carloadings for the week ended April 16 totaled 64,776 cars, as compared with 73,491 cars for the previous week, and 74,657 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
April 16, 1949	64,776	30,801
April 17, 1948	74,657	35,970
Cumulative totals for Canada:		
April 16, 1949	1,080,969	478,326
April 17, 1948	1,102,381	546,245

To Make First Railroad Test of Synthetic Liquid Fuel May 8

A new synthetic fuel produced from coal will be used for the first time on an American railroad on May 8, when it powers a special 8-car Diesel train of the Chicago, Burlington & Quincy on a 188-mi. round trip between St. Louis, Mo., and Louisiana. The test run is being made in collaboration with the Department of Interior, and is occasioned by the dedication of two United States Bureau of Mines' "coal-to-oil" demonstration plants in Louisiana. Making the trip will be government officials, industrial executives and invited guests.

These plants, states J. A. Krug, Secretary of the Interior are the first of their kind in this country and will employ different processes to convert coal and lignite into high-quality synthetic liquid fuels. Erected at a total cost of \$15 million, they are to serve as a proving ground for American coals, equipment and processing methods.

OVERSEAS

E.C.A. Releases \$120 Million for Rehabilitation of Italian Railroads

Release of 70 billion lire (about \$120 million) in Italian counterpart funds for reconstruction of Italy's war-damaged railroads has been announced by the Economic Cooperation Administration.

This amount, E.C.A. said, is part of the 250 billion lire program for improvement of various phases of Italy's economy, agreed to in principle in November, 1948. The 70 billion lire is to be used for new rolling stock, repairs and reconstruction of service buildings. Present plans include purchase of 313 coaches and 2,173 baggage and freight cars; repair of locomotives, bridges and buildings, and installation of electrical and mechanical equipment.

Although Italian railways have recovered to a great extent, lack of sufficient rolling stock is adding considerable expense to operations. Italy now has 113,800 freight cars, of which 18,000 are unserviceable, compared with 128,700 in 1939. There are 3,800 steam locomotives (1,396 unserviceable), compared with 4,277 in 1939, and 5,700 passenger cars (2,000 in poor condition), compared with 7,480 before the war. Inadequate automatic block signal systems and the poor condition of certain bridges and tunnels cause delay in routing and also add to operating costs.

With reconstruction and an expected revenue increase from higher tariffs, Italy hopes to reduce her railway operating deficit from 60 billion lire during the current fiscal year to about half that amount in 1949-50. Funds for the project, which has the approval of both E.C.A. and the Italian government, are lire which Italy is depositing as counter-part to dollar grants under the European Recovery Program.

ORGANIZATIONS

The next meeting of the **Eastern Car Foremen's Association** will be held on May 13, at 8 p.m., in the Engineering Societies building, 29 W. 39th street, New York. Joseph Michne, welding supervisor, New York Central, will present a paper on "Electric & Acetylene Welding As Applied to Car Repair Facilities."

The next meeting of the **Railway Club of Pittsburgh** will be "Ladies Night," and will be held in the Fort Pitt Hotel, Pittsburgh, Pa., on May 26, at 8 p.m. A dinner, motion pictures, and a dance will be the main features.

The **Central Railway Club of Buffalo** will hold its next meeting on May 12, at 8 p.m., in the Niagara room of the Hotel

Statler, Buffalo, N. Y. "The Competitive Situation in Transportation" will be the subject of an address to be given by J. C. Greenway, of New York, regional director, Competitive Transportation Research Division, Association of American Railroads. A Union Pacific motion picture also will be shown.

At the April 12 meeting of the **New England Shippers Advisory Board**, which was reported in the *Railway Age* of April 16, page 78, William H. Day, transportation manager of the Boston Chamber of Commerce, and Frank J. Gill, traffic manager of the Oxford Paper Company, Portland, Me., were reelected general chairman and general secretary, respectively.

The **Transportation Outing Club**, an organization of railroad, steamship and industrial traffic men of New York City, will celebrate its fiftieth anniversary with a dinner at the New York Athletic Club on the evening of May 5. Although membership in the T.O.C. has been limited, several hundred have qualified. Some have been retired by death; some have been transferred to other areas; and now only five of the original number are left. The semi-centennial anniversary will be attended by members from all parts of the country, and George F. Hichborn, retired director of traffic of the United States Rubber Company, will be reelected president by acclamation for his eighteenth term.

SUPPLY TRADE

Walter M. Gibbs, executive vice-president of the Spring Packing Corporation, Chicago, has resigned from that firm and formed his own railway supply business, the **W. M. Gibbs Railway Supply Company**, 332 South Michigan avenue, Chicago. He had been associated with Spring Packing since 1925, when he was employed as sales and service engineer. Mr. Gibbs was next a sales representative, and in 1930 was elected secretary and a director. In 1932 he was elected also vice-president, and remained in those capacities until January 1, 1947, when he was advanced to executive vice-president.

The **City Ice & Fuel Co.**, which operates some 75 icing stations for railroad cars, has changed its name to **City Products Corporation**. **William J. Sinek** has been re-elected president of the newly named company, and **Harry Strong**, formerly president of the Midwest Dairy Products Corporation, a division of City Products, has been advanced to chairman of that corporation. **Thomas J. Beck** succeeds Mr. Strong as president.

Boetius H. Sullivan, Jr., who is associated with the Chesapeake & Ohio in its traffic department at Chicago, will be

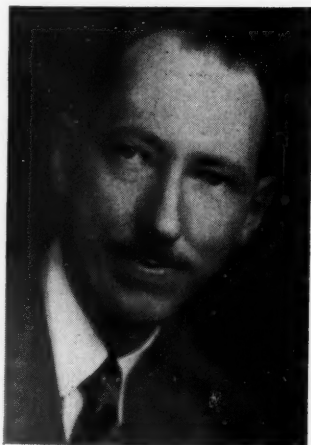
appointed vice-president and general manager of **The Orme Company**, Chicago, on May 1. He was born at Chicago in 1920, and was graduated from Yale University in 1942 with a B. A. degree. Shortly thereafter, Mr. Sullivan entered



Boetius H. Sullivan, Jr.

the army as a private, and served in various branches until his discharge as a first lieutenant in 1946. He subsequently joined the C. & O., and has remained with that road continuously since.

A. Cruickshank has been appointed plant engineer in charge of maintenance for the **McConway & Torley Corp.** Mr. Cruickshank was graduated from the Wentworth Institute and the Franklin Institute in Boston, Mass., and did post-



A. Cruickshank

graduate work at the Carnegie Institute of Technology and the University of Pittsburgh. He was associated with the New England Metallurgical Corporation and with the Jones & Laughlin Steel Corp. for 16 years, before joining **McConway & Torley**.

Charles M. Wheeler, formerly general sales manager of the **Union Switch & Signal Co.**, Swissvale, Pa., has been elected a vice-president of that company. He will continue to be in charge

of all district offices and sales. Mr. Wheeler was graduated from Pennsylvania State College in 1911 with a B. S. degree in electrical engineering and received his electrical engineering degree in 1913. He joined the Pennsylvania as a signal apprentice on July 1, 1911, and advanced through various positions until his appointment as assistant supervisor of signals on March 1, 1916. From March 1, 1918, to March 1, 1921, he held the positions of assistant division operator and division operator at Pittsburgh, Pa., and later was supervisor of telegraph and signals on the Erie & Ashtabula, Eastern and Pittsburgh divisions. Mr. Wheeler left the Pennsylvania on



Charles M. Wheeler

September 1, 1927, to join **Union Switch & Signal** as sales engineer at Swissvale. On October 1, 1940, he was transferred to New York as assistant district manager and, on October 9, 1945, was appointed district manager. He held that position until his appointment as general sales manager on January 31, 1949, which was reported in the *Railway Age* of February 19, page 58.

The **Okonite Company**, Passaic, N. J., has elected the following three new vice-presidents, who also will continue in their present capacities: **I. W. Borda**, manager of the Pacific coast district; **W. R. Van Steenburgh**, manager of the North-East sales district; and **Stephen A. Wilson**, secretary and general counsel. The company also has announced the opening of a new office in Dallas, Tex., at 1505 Tower Petroleum building, to be under the supervision of the Birmingham, Ala., district. **Otis W. Herring**, formerly in the Birmingham office, has been appointed manager of the new office and will be assisted by **S. K. Dick**, sales engineer.

Poor & Co., Chicago, has announced the election as vice-presidents of **E. A. Condit**, president of the Rail Joint Company, New York, and **Max K. Ruppert**, president of the P. & M. Co., Chicago.

Francis C. Tighe has been appointed traffic manager of the **Union Carbide &**

Carbon Corp. and its operating companies, with offices at 30 East 42nd street, New York. For 20 years, Mr. Tighe worked successively for the New York Central, the Atchison, Topeka & Santa



Francis C. Tighe

Fe and the Southern Pacific, and for three years was transportation officer for the seventh fleet of the United States Navy. He joined **Union Carbide & Carbon** in 1947 and was assistant to the general traffic manager at the time of his recent appointment.

Clarence B. Randall, vice-president and a director of the **Inland Steel Company** at Chicago, was elected president at the annual meeting of directors on April 27, succeeding **Wilfred Sykes**, who will continue with the company as a director and chairman of the executive committee. Mr. Randall was born on March 5, 1891, at Newark Valley, N. Y., and was graduated from Harvard University in 1912, and from the Harvard Law School in 1915. During World War



Clarence B. Randall

he served in the army as an infantry captain. He was admitted to the Michigan bar in 1915, and subsequently practiced law at Ishpeming, Mich., until August, 1925, when he joined the **Inland Steel Company** at Chicago, as assistant vice-president in charge of raw materials.

He was elected vice-president in 1930 and also a director in 1935, which positions he held at the time of his recent election as president.

Mr. Sykes, who pioneered the development of electrical equipment for steel mills, was born at Palmerston, North New Zealand, on December 9, 1883. He was educated at Melbourne (Australia) Technical College and Melbourne University, and began his business career in 1901 as an engineer for the Algemeine Elektrizitäts Gesellschaft, serving first in Australia and later at Berlin, Germany. In 1909 he came to the United States to become an engineer for the Westinghouse Electric & Manufacturing Co. He was appointed executive engineer for the Steel & Tube Company of America in 1920, and three years later joined Inland Steel. Mr. Sykes was subsequently advanced through various positions until he became president, the post he held at the time of his retirement.

Ralph C. Glacel, assistant to the traffic manager of the railway traffic and sales department of the **Texas Company**, at New York, has been promoted to assistant traffic manager, and **Herbert Adams**, chief clerk, has been promoted to assistant to traffic manager, succeeding Mr. Glacel.

ABANDONMENTS

Division 4 of the Interstate Commerce Commission has authorized:

Louisiana & North West.—To abandon a 37-mi. line from Gibsland, La., to Chestnut. The abandonment was protested by one of the line's principal shippers, the Southern Advance Bag & Paper Co., but another report of the division has authorized that company's subsidiary, the North Louisiana & Gulf, to purchase for continued operation the 15-mi. segment between Bienville, La., and Gibsland.

New York Central.—To abandon an 11.4-mi. line from Watertown Junction, N. Y., to Sackets Harbor. The commission's report said passenger service on the line was discontinued 13 years ago, and that, since April 6, 1948, freight trains have been operated only when necessary to handle carload traffic available. Protestants included industries at Sackets Harbor. The commission conceded that "some inconvenience or loss" would be suffered by some of those industries, but it nevertheless found that their transportation needs could be met by motor trucks. Approval of the abandonment was conditioned upon agreement by the Central to sell the line, or any portion thereof, to any person offering within 40 days to purchase it for continued operation at a price not less than the fair net salvage value.

Division 4 of the I.C.C. has authorized:

Canton & Carthage.—To abandon approximately 22 miles of its line between

Lake City, Miss., and Carthage, and to abandon operation under trackage rights over approximately 2 miles between Carthage and McAfee. The application stated that the logging industry at McAfee, which accounted for the main traffic over the above lines, was shut down during 1948.

CONSTRUCTION

Chicago & North Western.—This road has recently undertaken, at the indicated estimated costs, to construct a 3-stall frame enginehouse, 56 ft. by 80 ft., at Appleton Junction, Wis., (\$551,745); and to erect a masonry addition to an existing power house building to house enginemen's welfare facilities at Antigo, Wis., with alterations to the present building (\$25,450). The work is to be performed by company forces in cooperation with private contractors, who, on the latter project, will be Henry Danischefsky, Milwaukee, Wis. The North Western's subsidiary, the Chicago, St. Paul, Minneapolis & Omaha, will construct, at the East Minneapolis yard in Minneapolis, Minn., 20,000 linear feet of additional trackage to provide more space for classifying and switching grain cars. The road's forces will lay the track and an outside contractor will perform the grading work, the total cost of the job amounting to \$163,360. The Omaha, at Altoona, Wis., is erecting a one-story brick addition to its enginehouse to house welfare facilities for enginemen and enginehouse employees. The new structure, plus alterations to adjacent buildings, and heating and sanitary facilities, will cost \$41,765. Company forces and Henry Danischefsky, contractor, will perform the work.

Wheeling & Lake Erie.—This road has awarded a contract to the Wellman Engineering Company, Cleveland, Ohio, for installing two 17-gross-ton electrically operated Hulett type ore unloaders at the ore dock in Huron, Ohio. The cost is estimated at \$2,000,000, including more than \$1,600,000 for the unloaders. In addition, the W.&L.E. will erect a power substation and power feeders to supply current to the unloaders. It is expected the installation will be completed and the unloaders in operation by the middle of the 1950 Great Lakes shipping season. The new equipment will replace two steam-operated Hulett type unloaders of 15-gross-ton capacity each, which will be dismantled. Under favorable conditions, each of the all-electric unloaders will be capable of lifting 17 gross tons a minute. They will be built to Wellman Engineering's design and specifications and will be equipped with Ward-Leonard controls to facilitate movement, and with machinery to weigh each load.

FINANCIAL

Investment House Publications

[The surveys listed herein are, for the most part, prepared by financial houses for the information of their customers. Knowing that many such surveys contain valuable information *Railway Age* lists them as a service to its readers but assumes no responsibility for facts or opinions they may contain bearing upon the attractiveness of specific securities.]

Dreyfus & Co., 50 Broadway, New York 4.

Coincidence or Margins. Chart showing comparison between Dow-Jones industrial averages and all common stocks, domestic companies, listed on N.Y.S.E., accompanied by brief text discussing investment and speculative securities. (Mar. 28)

The Proof of the Pudding. Dividends—one of many factors to be considered in appraising which railroads to buy or sell. (Apr. 25)

Freeman & Company, 61 Broadway, New York 6.

Equipment Trust Securities Supplement. Describes equipment trust certificate issues sold to the public during 1947 and 1948 (price, \$2); a supplement to the 1947 *Equipment Trust Securities Manual* (price \$3.50).

H. Hentz & Co., 60 Beaver st., New York 4.

Fortnightly Financial and Economic Review:

Common Stocks as a Means of Investment, Vol. 2, No. 3. (Mar. 28)

Deflation or Readjustment?, by Dr. Marcus Nadler, Vol. 2, No. 4. (Apr. 11) Smith, Barney & Co., 14 Wall st., New York 5.

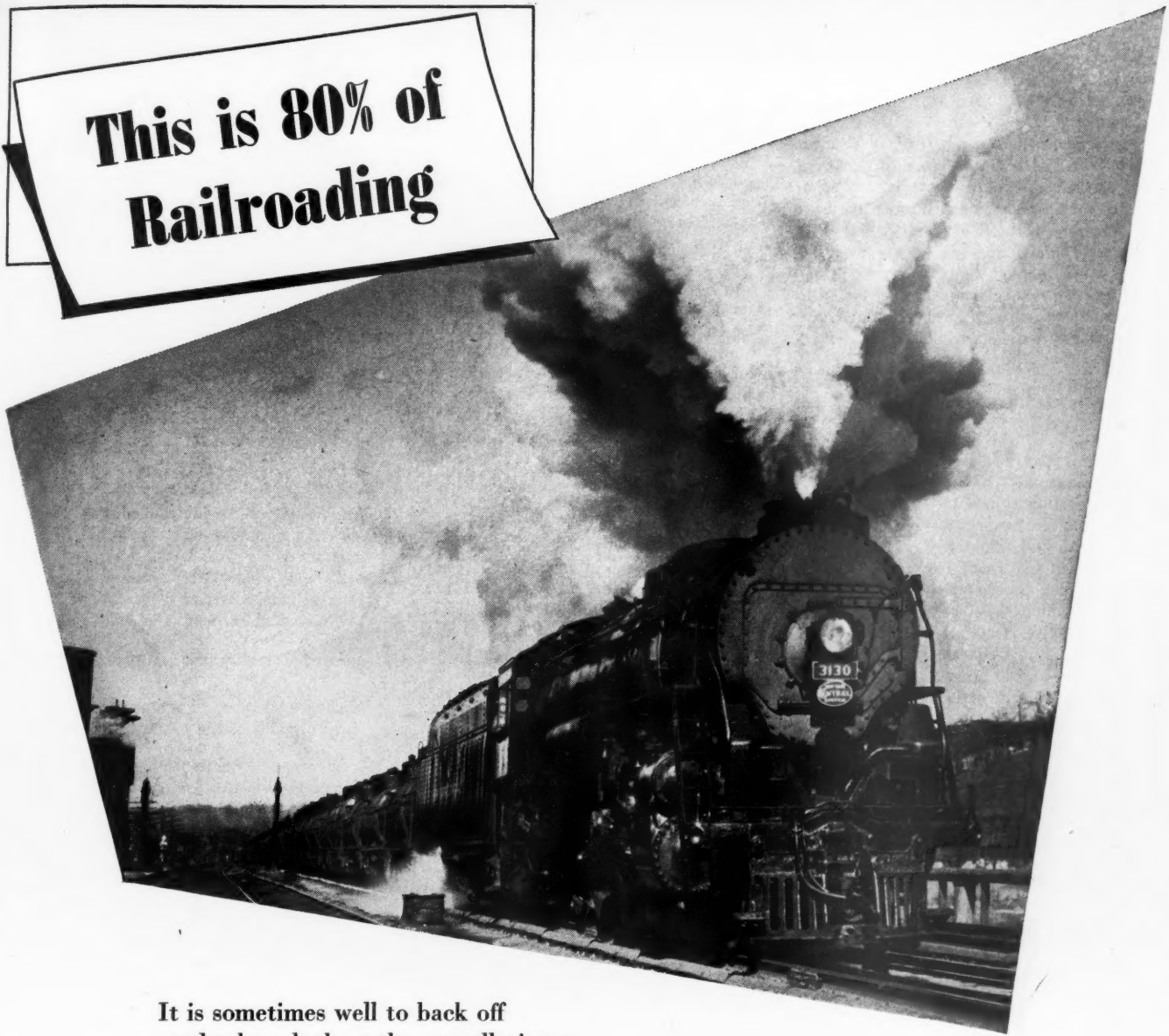
Railroad Earnings. 1948 statistics compiled to aid in the comparative evaluation of railroad stocks and bonds. (Apr. 12)

Railroad Income Bonds. Relatively low prices and high yields offset risks of temporary interest lapse and wide price fluctuations. Important differences between various bonds. Contingent interest earned last year on practically all bonds insuring payments this year. (Mar. 22)

Arkansas & Ozarks.—*Acquisition.*—This company now seeks authority from the Interstate Commerce Commission to acquire 71 mi., instead of 69 mi., of the Missouri & Arkansas' abandoned lines. The additional 2 mi. is the branch between Junction, Ark., and Eureka Springs. Authority to acquire it is sought in a recently filed amendment to the original application which asks authority to acquire the 65.9-mi. line between Harrison, Ark., and Seligman, Mo., and the 3.16-mi. branch between Freeman, Ark., and Berryville (see *Railway Age* of April 2, page 58).

Chesapeake & Ohio.—*Lease of Leelanau Transit.*—Extension and modification of the lease under which this road's subsidiary, the Manistee & Northeastern,

**This is 80% of
Railroading**



It is sometimes well to back off
and take a look at the overall picture.

We're thinking of the steam locomotive. These locomotives
are producing three *billion* ton-miles—and will do it again tomorrow
and the next day. They—these steam locomotives—are doing 80 per
cent of the work on the railroads—more work than
they ever did in any year before 1941.

Many of these locomotives are old, too old, and have distorted
the statistics on performance. Many, however, are modern. And
on modern steam power—locomotives that pack 5000 to 9000
horsepower and can stay on the road for 16 and 18 hours, and then
turn around in an hour or two—the statistics look pretty good.

We build such modern power—and are convinced that it has its place.



DIVISIONS: Lima, Ohio — Lima Locomotive Works
Division; Lima Shovel and Crane Division. Hamilton,
Ohio — Hooven, Owens, Rentschler Co.; Niles Tool
Works Co. Middletown, Ohio — The United Weld-
ing Co.

PRINCIPAL PRODUCTS: Locomotives; Cranes and shov-
els; Niles heavy machine tools; Hamilton diesel and
steam engines; Hamilton heavy metal stamping presses;
Hamilton-Kruse automatic can-making machinery; Spe-
cial heavy machinery; Heavy iron castings; Weldments.

operates the railroad properties of the Leelanau Transit Company has been approved by Division 4 of the Interstate Commerce Commission. The leased properties consist of a line from a connection with the M.&N. at Hatch's Crossing, Mich., to Northport, 24 mi., and a separate track, about ½ mi. in length, which connects with the M.&N. at Traverse City, Mich. The modification of the lease reduces the annual rental from \$1,287 to \$1,000, the lessee being required also to maintain the leased properties and pay the taxes thereon as before. The extension period will run until January 18, 1951, but there are provisions for renewal for an additional two years from that date.

Long Island.—Compensation of Trustees.—Division 4 has approved maximum compensation at annual rates of \$21,000 and \$12,000, respectively for David E. Smucker and Hunter L. Delatour, as trustees of this road. The approval order contained a proviso stipulating that such compensation shall be all the trustees shall receive from the estate of the debtor. The appointments of Messrs. Smucker and Delatour were recently ratified by the division (see *Railway Age* of April 16, page 83).

Montana, Wyoming & Southern.—Bond Modification.—This road has applied to the Interstate Commerce Commission for authority to modify its first-mortgage gold bonds under the so-called Mahaffie Act (section 20b of the Interstate Commerce Act). The proposed modification would involve payment of \$150 in cash on each \$850 bond outstanding in the hands of the public, and extension of the maturity date of the remaining \$700 from September 1, 1949, to September 1, 1959. The \$850 denomination of the bonds reflects a payment of \$150 on principal, made when the maturity date was previously extended from September 1, 1939, to September 1, 1949. The bonds now outstanding in the hands of the public total \$262,650, and the application said it would be impossible to provide for retirement in full on September 1. The modification plan proposes that the portion of the bonds extended would bear the same interest rate as at present—a fixed rate of 3 per cent, plus non-cumulative contingent interest up to an additional 2 per cent in any year, dependent upon earnings. While there would be no sinking-fund arrangements, the extended bonds would be redeemable at the option of the company in whole or in part at their principal amount, as reduced, plus accrued interest.

New York, New Haven & Hartford.—Sued by Howard S. Palmer.—Howard S. Palmer, former president of this road, has brought suit against the road charging it with breach of contract. In the suit, filed in New Haven, Conn., Superior Court, Mr. Palmer, it has been reported, charges that the New Haven has failed to maintain the monthly payments he understood he would receive for the rest

of his life. According to the suit, the report states, the monthly payments were to be made to Mr. Palmer starting August 12, 1948, the date of his retirement as president of the New Haven.

North Louisiana & Gulf.—Acquisition.—Division 4 of the Interstate Commerce Commission has approved the purchase by this road of the Louisiana & North West's 15-mi. line between Bienville, La., and Gibsland. The line, to be purchased for \$72,500, is part of a 37-mi. line between Gibsland and Chestnut, La., which another recent report of the division has authorized the L.&N.W. to abandon. The principal shipper on the 15-mi. segment is the Southern Advance Bag & Paper Co., which controls the N.L.&G. through 95 per cent ownership of its capital stock. Under the purchase agreement, as outlined in the division's report, that road will also acquire use of some of the L.&N.W.'s terminal facilities; and it will be given an option to purchase for a "nominal" consideration "certain abandoned track facilities south of Gibsland, if and when the North West should decide to dispose of them."

Pacific Electric.—Operation.—Division 4 of the Interstate Commerce Commission has authorized this road to operate, in interstate and foreign commerce, its 2.6-mi. Duarte branch now classified as industrial trackage. The branch extends from Arcadia, Cal., where it connects with the P.E.'s Monrovia-Glendora line, to Monrovia; the new operating plan involves construction in Monrovia of another 0.47-mi. connection with the Monrovia-Glendora line. Thus, the branch will become an alternate main-line route for traffic between Los Angeles and points east of Monrovia.

Sanford & Eastern.—Acquisition and Securities.—This road, formerly known as the Sanford Terminal, has applied to the Interstate Commerce Commission for authority to acquire the Boston & Maine's line from Rochester, N. H., to Westbrook, Me., approximately 45 miles. Concurrently, the S.&E. has applied for authority to issue \$75,000 of common stock (750 \$100-par shares) to S. M. Pinsky, of Yonkers, N. Y. Mr. Pinsky is the president, treasurer and a director of the company, and also holds similar positions with the Hoosac Tunnel & Wilmington and the Saratoga & Schuylerville. The application said the \$75,000 would be used to pay the B.&M. \$25,000 for the Rochester-Westbrook line, to make additions and betterments to that line and other property of the applicant, and for working capital. The Rochester-Westbrook line connects at Springvale, Me., with the 2.4-mi. line from Sanford, Me., to Springvale, which the commission recently authorized the applicant to acquire from the York Utilities Company (see *Railway Age* of April 2, page 59.)

Wabash.—New Director.—Donald Danforth, president of the Ralston Purina Company of St. Louis, Mo., has been



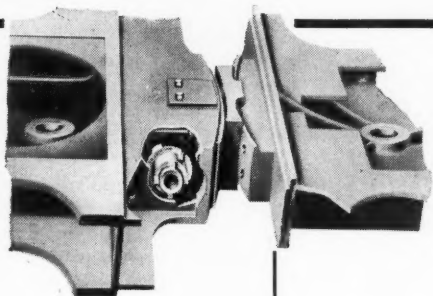
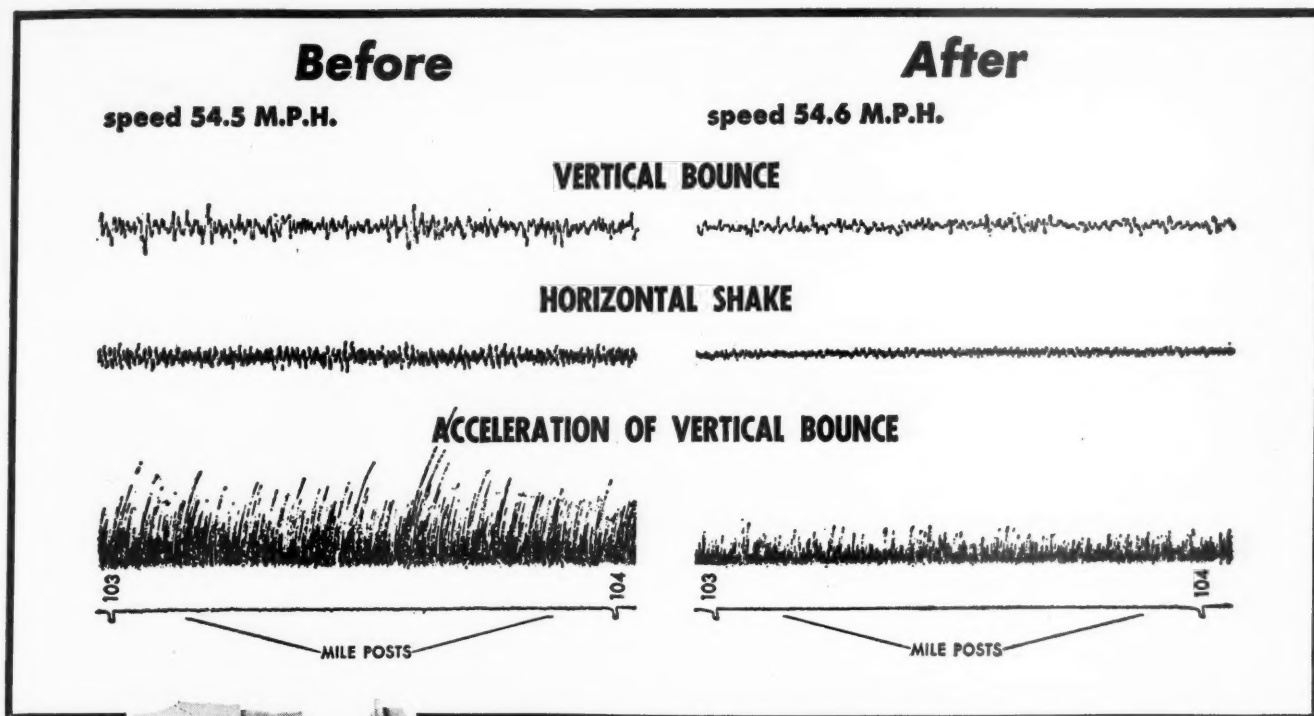
President William T. Faricy (right) and Vice-President Robert S. Henry of the Association of American Railroads examining some of the more than 45,000 requests for the A.A.R. Quiz on Railroads and Railroadng which resulted from the offer of the booklet on *The Railroad Hour*, the railroads' musical radio program

elected a member of this road's board of directors and of the executive committee.

Wyoming.—Reorganization Plan Rejected.—Division 4 of the Interstate Commerce Commission has found this road's proposed plan of reorganization to be "prima facie impracticable." The plan, designed to effect a reorganization under section 77 of the Bankruptcy Act, was submitted to the commission in February, after it had been filed with the United States District Court for the District of Wyoming, where the road's reorganization proceeding is also pending. The commission said that no balance sheet or income statement was included in the plan, and that the road had not filed annual reports for any period subsequent to December 31, 1945. In its petition for reorganization, the debtor listed "certain of its debts" totaling \$1,781,931. The reorganization plan, as the commission's report put it, "contemplates that debtor borrow an undisclosed sum of money from undisclosed parties at an undisclosed rate of interest secured by its note and the pledge of all its first mortgage bonds which are now owned by its president, C. Porter Dickson." With the proceeds of this loan the debtor would start rehabilitating its road, and pay all allowed claims except state and county taxes at the rate of 50 cents on the dollar. The president would "subrogate" his claims on the bonds to the rights of other present creditors.

Among other criticisms of these proposals, the commission pointed out that it did not specify the treatment to be accorded the bonds nor provide for any change in the rights of the stockholders. But the "most important defect in the plan," the report said, "rests in the apparent intention of borrowing funds for rehabilitation of the property as a part of

How to cure a ROUGH-RIDING LOCOMOTIVE



FRANKLIN E-2 BUFFERS will reduce maintenance by damping and absorbing horizontal shake and vertical vibration.

The E-2 radial buffer incorporates a built-in draft gear with large bearing areas. Two large adjusting wedges, energized by compressed springs, hold the chafing plates in firm contact, permitting no slack but retaining complete freedom of movement between engine and tender. This effectively dampens and absorbs both horizontal shake and vertical vibration of the locomotive. Only the Franklin "E" type buffers provide this shock absorbing action.

The E-2 radial buffer will make any locomotive, at any speed, a better riding engine. It requires minimum attention and will cut down maintenance on many related locomotive parts by markedly reducing shake and bounce. Crews appreciate the greater comfort it brings.

The above charts show the effectiveness of this buffer. These charts were made on a western road — two days apart — on the same locomotive, between the same mileposts, pulling the same trainload in the same direction at the same speed. The E-2 buffer, as compared with the wedge-type buffer originally used, reduced vertical bounce 50%, horizontal shake 66%, and acceleration of vertical bounce (impact factor) 62%.



FRANKLIN RAILWAY SUPPLY COMPANY

NEW YORK • CHICAGO • MONTREAL

STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
AUTOMATIC FIRE DOORS • DRIVING BOX LUBRICATORS • STEAM GRATE SHAKERS • FLEXIBLE JOINTS • CAR CONNECTION

the plan, thus reorganizing before the property is placed in condition for efficient operation." The commission went on to explain that "unless the debtor can be operated successfully under the direction of the trustee and the court, there is no possibility of our determining the permissible capitalization or the kinds of securities which should be issued." The Wyoming's line extends from a connection with the Chicago, Burlington & Quincy at Clearmont, Wyo., to Buffalo, 28.5 mi.

New Securities

Applications have been filed with the Interstate Commerce Commission by:

Cambria & Indiana.—To assume liability for \$650,000 of equipment trust certificates to finance in part the acquisition of 200 50-ton steel hopper coal cars from the Bethlehem Steel Company at a unit cost of \$4,730 and an estimated total cost of \$945,982. The certificates would be dated June 1, and would mature in 10 annual installments of \$65,000, beginning June 1, 1950. They would be sold on the basis of competitive bids with the interest rate fixed by such bids.

New York Central.—To assume liability for \$10,725,000 of equipment trust certificates to finance in part the acquisition of the following equipment:

Description and builder	Estimated Unit Cost
8 1,500-hp. "A" unit Diesel-electric road freight locomotives (American Locomotive Company)	\$170,200
4 1,500-hp. "B" unit Diesel-electric road freight locomotives (American)	152,400
3 1,500-hp. "A" unit Diesel-electric road freight locomotives (American)	170,000
7 1,500-hp. "B" unit Diesel-electric road freight locomotives (American)	152,200
16 1,500-hp. "A" unit Diesel-electric road freight locomotives (General Motors Corporation, Electro-Motive Division)	168,840
8 1,500-hp. "B" unit Diesel-electric road freight locomotives (Electro-Motive)	150,540
6 1,000-hp. Diesel-electric switching locomotives (Lima-Hamilton Corporation)	98,000
4 1,000-hp. Diesel-electric switching locomotives (American)	98,500
400 70 on high-side steel gondola cars (Bethlehem Steel Company)	6,650
500 70-ton high-side steel gondola cars (Despatch Shops, Inc.)	5,280

Total estimated cost of all this equipment is \$13,734,360. The certificates would be sold on the basis of competitive bidding, and the interest rate would be fixed by such bids. They would be dated May 15, and mature in 15 annual installments of \$715,000 each, beginning May 15, 1950.

Chicago, Great Western.—To assume liability for \$7,020,000 of equipment trust certificates to finance in part the acquisition of 21 Diesel-electric locomotives delivered during the period from October, 1947, through March, 1949, and now used under conditional sales agreements, and the following new equipment:

Description and builder	Estimated Unit Cost
2 3,000 hp. Diesel-electric passenger locomotives (General Motors Corporation, Electro-Motive Division)	\$350,600
2 1,500 hp. Diesel-electric "B" unit freight locomotives (Electro-Motive)	156,788
1 2,000 hp. Diesel-electric transfer locomotive (Electro-Motive)	207,201
8 1,000 hp. Diesel-electric switching locomotive (Baldwin Locomotive Works)	102,500
3 1,500 hp. Diesel-electric road switching locomotives (American Locomotive Company)	140,500
75 70-ton steel hopper cars (General American Transportation Corporation)	6,575

The application put the estimated total cost of this new equipment at \$3,659,102.

The certificates would be dated May 1, and would mature in 27 semi-annual installments of \$260,000. They would be sold on the basis of competitive bids with the interest rate fixed by such bids.

Dividends Declared

Atlantic Coast Line.—\$1.00, payable June 13 to holders of record May 18.

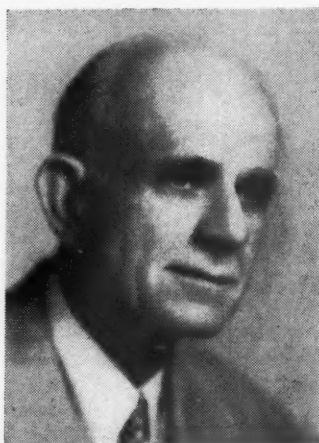
Average Prices Stocks and Bonds

	Apr. 26	Last week	Last year
Average price of 20 representative railway stocks	39.08	40.23	52.41
Average price of 20 representative railway bonds	86.81	87.25	88.77

RAILWAY OFFICERS

EXECUTIVE

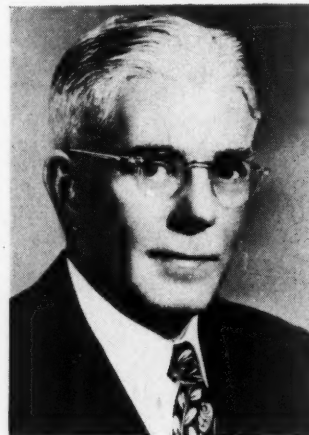
Charles Cook Howell, general counsel of the Atlantic Coast Line, has been elected also vice-president, with headquarters as before at Wilmington, N. C. **A. S. Trundle, Jr.**, assistant vice-president and comptroller, has been appointed assistant vice-president—accounts, at Wilmington. A biography and photograph of Mr. Trundle were published in the *Railway Age* of January 29, page 288. Mr. Howell was born in Charlton county, Ga., and received his



Charles Cook Howell

B.A. degree from Elon College in North Carolina and his LL.B. from the University of Virginia. He began practicing law in Jacksonville, Fla., in 1916 and from 1925 to 1929 served as city bond attorney. Mr. Howell was for many years the senior partner in the law firm of Howell, McCarthy, Lane & Howell of Jacksonville. He entered the service of the A.C.L. on March 10, 1948, as senior general solicitor and was appointed general counsel on May 14, 1948, which position he will continue to hold, in addition to the vice-presidency.

Guy O. Beale, chief purchasing and stores officer of the Chesapeake & Ohio at Cleveland, Ohio, has been appointed vice-president—purchases. Mr. Beale was born in Ettricks, now a part of Petersburg, Va., on September 24, 1888, and entered the service of the C. & O. on April 8, 1908, as a clerk in the mechani-



Guy O. Beale

cal department at Richmond, Va. After working in the office of the vice-president—operations and the office of the president, he was appointed assistant to the vice-president—mechanical, purchases and stores, in 1933. Three years later Mr. Beale became chief purchasing and stores officer.

Howard F. Fritch, assistant to the president of the New York, New Haven & Hartford and president of the New England Transportation Company, with headquarters at Boston, Mass., has been elected also president of the Connecticut Company. Mr. Fritch succeeds **Laurence F. Whittemore**, president of the New Haven, who had also served as president of the Connecticut Company, a New Haven bus operating affiliate which provides bus transit facilities in a number of Connecticut communities. A biography and photograph of Mr. Fritch were published in the *Railway Age* of December 11, 1948, page 1131.

FINANCIAL, LEGAL & ACCOUNTING

W. E. Hand, assistant comptroller of the Atlantic Coast Line, has been appointed comptroller, with headquarters as before at Wilmington, N. C. A biography and photograph of Mr. Hand were published in the *Railway Age* of March 12, page 568.

OPERATING

James P. Walker, general superintendent of the Southern division of the Atlantic Coast Line at Jacksonville, Fla., has retired from active service at his own request, after more than 43 years of service with that road. Mr. Walker was born

more profit from steam locomotive operation



Hundreds of steam locomotives now in road service are capable of giving many more years of really profitable operation if their efficiency is stepped up.

As shown by the experience of fifty railroads, steaming performance can be decidedly improved by installation of Security Circulators.

Security Circulators have the additional advantage of definitely lessening honeycombing, flue plugging and cinder cutting, thus making possible greater locomotive utilization and also

affording a worth-while saving in boiler maintenance costs.

* * *

For nearly forty years American Arch has been designing and furnishing arch brick for coal-burning locomotives. Now American Arch has introduced the Security Dutch Oven to increase efficiency of combustion in oil-burning steam motive power, and installations have already been made in over two hundred locomotives.

American Arch Company Inc.

NEW YORK • CHICAGO

at Overfield, W. Va., on April 27, 1883, and attended the public schools, Rockville Academy and Washington & Lee University. He entered railroad service in July, 1903, as chainman with the Baltimore & Ohio, serving later as rodman, levelman and transitman. In April 1906, Mr. Walker went with the A.C.L. as transitman, subsequently serving until April, 1923, as resident engineer, division engineer, assistant engineer, assistant superintendent, and superintendent, successively, at Charleston, S. C. He was appointed superintendent of transportation at Jacksonville, Fla., in April, 1923, and in September, 1926, became general superintendent at Savannah, Ga., transferring to Jacksonville on October 16, 1934.

Frederick B. Hank, assistant to the general manager of the New York Central Lines, East, has been appointed to the new position of general manager of the Electric, Harlem, Putnam and River (West Shore) divisions and the New York Terminal district, including the Marine department, with headquarters as before at New York. Mr. Hank is a native of Troy, N. Y., and, after graduation



Frederick B. Hank

from Rennselaer Polytechnic Institute in 1915, entered the service of the N. Y. C. as a rodman in the engineering department. He was promoted to assistant engineer in the designing engineer's office at New York in 1920; assistant designing engineer, Lines East, in 1925; and assistant engineer, office of executive vice-president, in 1930. Mr. Hank became assistant to the general manager, Lines East, at New York in 1939.

E. B. Rush, superintendent transportation of the Atlantic Coast Line at Jacksonville, Fla., has been appointed general superintendent of the Southern division, with the same headquarters, succeeding **J. P. Walker**, retired. **W. J. Turner**, assistant chief engineer at Jacksonville, has been appointed superintendent transportation, also with the same headquarters. **W. D. Quarles, Jr.**, trainmaster at Florence, S. C., has been transferred to

the Richmond district at Rocky Mount, N. C. **B. B. Vaughan**, acting chief dispatcher at Ocala, Fla., has been appointed acting trainmaster of the Jacksonville district at Sanford, Fla., succeeding **C. N. Collins**, who has been appointed trainmaster of the Columbia district at Florence. **H. S. Flippen**, trainmaster of the Richmond district at Rocky Mount, has been appointed general mechanical instructor at Wilmington, N. C.

TRAFFIC

J. H. Meierant, assistant general freight agent of the Missouri Pacific Lines at St. Louis, Mo., has retired after more than 42 years of continuous service.

Andrew J. Garibaldi, traveling freight and passenger agent of the Pennsylvania, with headquarters at Memphis, Tenn., will be promoted to district freight and passenger agent at that point on May 1, succeeding **Joseph G. Hammond**, who will retire from active duty after more than 52 years of continuous service. **Lawrence J. Logsdon**, chief clerk in the district freight traffic office at Kansas City, Mo., will replace Mr. Garibaldi. **J. M. C. Collins**, district freight agent at Richmond, Ind., has been transferred in that position to Canton, Ohio. He has been succeeded by **W. S. Wilson, Jr.**, district freight agent at St. Louis, Mo., who in turn is replaced by **N. W. Hawkes, Jr.**, district freight agent at Rochester, N. Y.

William A. Nelson, Jr., general agent of the Illinois Terminal at Memphis, Tenn., has been promoted to western traffic manager, with headquarters at San Francisco, Cal., succeeding **E. A. Compton**, who has been appointed general agent at Dallas, Tex. Mr. Nelson has been replaced by **Donald B. Powell**, general southwestern agent at Dallas. The post formerly held by Mr. Powell has been abolished.

Wilbur A. Jarrett, commercial agent of the Southern at Charlotte, N. C., has been appointed division freight and passenger agent of that railway and the Blue Ridge, at Anderson, S. C.

MECHANICAL

The Missouri Pacific has announced the appointment of **E. M. Vandiver** as acting master mechanic of the Omaha-Northern Kansas and Kansas City Terminal divisions at Falls City, Neb., succeeding **Richard Kling**, who has been granted a sick leave.

The Denver & Rio Grande Western has announced the following changes in its mechanical department: **Ralph M. McClean**, master mechanic on the Pueblo division, at Burnham, Colo., promoted to general master mechanic in charge of steam locomotive maintenance and servicing for the entire system; **Earl Fisher**,

assistant master mechanic at Denver, Colo., advanced to succeed Mr. McClean; **Paul F. Giesking**, master mechanic on the Grand Junction division, promoted to superintendent of Diesel equipment at Denver, succeeding **James H. Whipple, Jr.**, transferred to Burnham as assistant superintendent of Diesel equipment; and **Charles R. Eisele**, shop engineer, system, appointed to replace Mr. Giesking.

ENGINEERING & SIGNALING

L. W. Funk, engineer maintenance of way of the Charleston & Western Carolina at Augusta, Ga., has been appointed assistant chief engineer of the Atlantic Coast Line at Wilmington, N. C. **C. E. Vick**, roadmaster, A.C.L., at Albany, Ga., succeeds Mr. Funk as engineer maintenance of way of the C. & W. C. at Augusta.

SPECIAL

G. R. French, division superintendent of the Texas & Pacific, at Alexandria, La., has been promoted to assistant director of personnel, at Dallas, Tex.

H. T. Coleman, public relations officer of the Canadian Pacific at New York for the past three years, has been promoted to system headquarters at Montreal, Que., as assistant to the manager of the department of public relations. Mr. Coleman has been succeeded at New York by **P. T. Cole**, public relations officer at Chicago since 1947. **J. F. Magor**, public relations officer, Prairie region, at Winnipeg, Man., has been transferred to the Pacific region at Vancouver, B. C., succeeding **J. R. Sturdy**, who has resigned at his own request to follow a screen writing career in Hollywood, Cal. **J. A. Merkel**, assistant public relations officer, has been promoted to public relations officer, with headquarters as before at Montreal, succeeding **J. W. Maunder**, who succeeds Mr. Magor at Winnipeg.

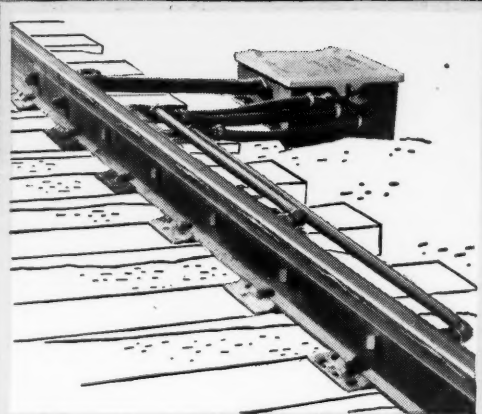
OBITUARY

H. M. Bainer, general agriculture agent of the Panhandle & Santa Fe at Amarillo, Tex., died in New York on April 23.

William P. Walsh, who retired last September 1 as manager of the Grand Central Terminal Information Bureau at New York, died on April 20 of a heart attack at his home in Richmond Hill, Long Island, N. Y., at the age of 74.

Oscar N. Harstadt, vice-president of the Chicago, Milwaukee, St. Paul & Pacific, died in the Evanston Ill., hospital on April 27 following a recurrent illness which forced him on June 1, 1948, to relinquish his post as operating vice-president.

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**Effectively reduce
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DEPTH HARDENED
CROSSINGS

REVERSIBLE MANGANESE
STEEL CROSSINGS

MANGANESE STEEL
GUARD RAILS



Freight Operating Statistics of Large Steam Railways — Selected

New Eng. Region	Region, road and year	Miles of road operated	Locomotive Miles			Car-miles		Ton-miles (thousands)		Road-locs. on lines				
			Train-miles	Principal and helper		Loaded (thousands)	Per cent loaded	Gross excl. locos. & tenders	Net rev. and non-rev.	Serviceable		B.O.	Per cent B.O.	
				Light						Unstored	Stored			
Great Lakes Region	Boston & Maine.....	1949	1,746	287,464	296,872	12,760	10,335	69.6	645,750	274,760	105	7	5	4.3
	1948	1,746	332,283	343,027	15,118	11,146	71.8	689,779	299,301	106	8	8	7.0	
	N. Y., N. H. & Htd.	1949	1,774	308,572	312,178	25,531	12,166	69.1	741,514	331,333	112	14	23	15.4
	1948	1,815	339,580	342,672	36,396	12,094	74.6	703,350	321,847	127	7	32	18.9	
	Delaware & Hudson.....	1949	794	257,648	307,970	30,980	10,443	65.9	747,601	387,534	117	43	24	13.0
	1948	794	288,397	343,843	33,926	11,555	68.4	824,889	444,157	123	21	34	19.1	
	Del., Lack. & Western.....	1949	967	290,115	327,539	35,996	12,264	65.3	835,871	374,477	103	33	12	8.1
	1948	970	330,194	371,067	46,522	12,453	69.5	819,605	372,062	122	2	18	12.7	
	Erie.....	1949	2,229	622,965	650,278	45,952	31,725	63.9	2,113,190	873,226	217	73	58	16.7
	1948	2,229	711,004	751,484	60,587	34,641	69.5	2,206,545	956,497	262	20	83	22.7	
	Grand Trunk Western.....	1949	971	235,718	241,836	2,076	7,548	64.0	499,767	207,461	61	2	6	8.7
	1948	972	282,433	289,393	2,451	8,520	70.4	537,757	234,473	67	1	7	9.5	
Central Eastern Region	Lehigh Valley.....	1949	1,239	277,960	299,334	32,592	11,737	65.5	816,755	378,946	80	14	19	16.8
	1948	1,239	318,361	351,208	46,568	12,530	70.3	832,422	404,163	105	8	39	25.7	
	New York Central.....	1949	10,689	3,278,014	3,493,670	228,025	109,599	59.7	7,878,920	3,540,805	1,081	110	335	22.0
	1948	10,704	3,297,561	3,543,909	285,543	112,142	65.0	7,738,377	3,672,863	1,120	9	343	23.3	
	New York, Chic. & St. L.....	1949	1,696	624,028	636,444	8,565	23,848	64.0	1,604,178	690,195	146	10	16	9.3
	1948	1,656	690,509	690,886	9,183	25,765	70.1	1,638,164	736,720	148	1	18	10.8	
	Pitts. & Lake Erie.....	1949	221	98,198	100,183	193	3,893	64.6	329,467	192,541	33	3	13	26.5
	1948	223	107,418	109,737	189	3,994	64.4	335,244	194,439	33	1	11	25.0	
	Wabash.....	1949	2,381	623,178	633,400	14,070	20,817	67.6	1,354,563	574,390	157	7	38	18.8
	1948	2,381	657,871	676,926	16,134	22,946	73.2	1,441,966	650,185	157	15	30	14.9	
	Baltimore & Ohio.....	1949	6,086	1,872,428	2,248,806	244,109	63,762	60.4	4,856,089	2,338,216	800	103	216	19.3
	1948	6,076	2,092,031	2,598,925	306,682	67,685	65.4	4,920,171	2,470,937	858	2	276	24.3	
Pocahontas Region	Central of New Jersey*	1949	415	75,621	76,184	4,949	2,740	62.3	209,207	106,767	46	4	9	15.3
	1948	418	80,889	86,637	9,691	3,042	66.4	225,784	118,394	44	1	17	27.9	
	Central of Pennsylvania.....	1949	212	79,977	85,878	11,787	2,626	62.8	199,907	105,137	37	7	15	25.4
	1948	213	78,380	89,935	16,298	2,942	70.7	214,187	118,405	43	14	14	20.3	
	Chicago & Eastern Ill.....	1949	909	140,572	141,443	4,214	4,839	66.3	331,312	162,329	57	1	12	17.4
	1948	909	182,668	183,220	4,268	5,535	70.9	371,065	189,326	57	6	1	2.1	
	Elgin, Joliet & Eastern.....	1949	238	102,410	103,146	10	3,539	64.5	276,661	147,902	40	1	4	6.8
	1948	391	127,799	134,261	4,008	3,571	66.5	273,204	146,599	54	109	257	13.2	
	Pennsylvania System.....	1949	10,039	3,506,191	3,902,322	461,296	128,607	59.6	9,565,614	4,489,854	1,578	2	278	13.0
	1948	10,023	3,769,114	4,240,069	569,752	134,302	66.2	9,445,520	4,623,590	1,866	18	35	14.1	
	Reading.....	1949	1,336	419,087	439,280	37,642	15,134	60.4	1,228,212	651,677	195	10	31	11.7
	1948	1,352	483,509	530,472	56,889	16,513	66.3	1,309,173	740,498	224	10	13	7.6	
Southern Region	Western Maryland.....	1949	837	196,864	245,909	38,230	7,371	60.5	616,266	336,113	147	3	11	6.4
	1948	837	244,017	297,112	48,130	7,898	61.8	673,274	375,430	158	3	11	6.4	
	Chesapeake & Ohio.....	1949	5,026	1,507,445	1,619,657	70,458	60,954	56.5	5,211,525	2,850,572	581	34	115	15.8
	1948	4,987	1,774,520	1,909,167	92,349	70,603	59.3	5,886,736	3,404,205	619	4	91	12.7	
	Norfolk & Western.....	1949	2,107	752,118	801,928	59,129	33,593	57.2	2,975,777	1,612,255	279	34	12	3.7
	1948	2,107	892,784	962,388	80,451	38,691	59.6	3,417,851	1,914,889	277	14	22	7.0	
	Atlantic Coast Line.....	1949	5,543	952,409	965,156	14,033	24,526	60.8	1,712,165	746,024	386	1	88	18.5
	1948	5,552	1,026,649	1,056,037	15,256	27,082	66.0	1,800,194	823,832	355	1	67	15.8	
	Central of Georgia.....	1949	1,783	289,735	292,503	4,418	7,241	71.5	479,864	228,413	100	4	9	8.0
	1948	1,783	302,019	306,475	5,847	7,614	72.5	495,573	239,064	94	2	9	8.6	
	Gulf, Mobile & Ohio.....	1949	2,854	327,891	328,146	588	14,883	73.8	964,911	474,617	104	14	5	4.1
	1948	2,847	387,025	394,671	795	16,614	74.8	1,071,549	535,109	123	7	17	11.6	
Northwestern Region	Illinois Central.....	1949	6,552	1,426,012	1,429,398	50,218	48,458	62.7	3,442,654	1,621,282	543	30	79	12.1
	1948	6,581	1,635,521	1,643,333	56,025	55,120	64.7	3,857,405	1,846,520	584	13	56	8.6	
	Louisville & Nashville.....	1949	4,754	1,361,299	1,463,116	37,546	34,728	62.9	2,546,936	1,307,766	374	30	82	16.9
	1948	4,750	1,614,574	1,760,530	54,871	40,205	65.2	2,917,172	1,543,517	409	1	85	17.2	
	Nash., Chatt. & St. Louis.....	1949	1,051	234,605	239,766	6,622	6,176	74.7	389,323	183,497	75	1	2	26.0
	1948	1,051	305,217	318,609	8,710	6,946	77.7	428,091	210,910	83	1	16	16.2	
	Seaboard Air Line.....	1949	4,142	803,651	860,466	12,487	23,843	63.1	1,711,237	753,378	276	5	42	13.0
	1948	4,141	894,304	958,168	10,918	25,076	67.6	1,704,180	722,234	280	1	47	14.4	
	Southern.....	1949	6,381	1,402,826	1,418,914	25,872	39,233	66.3	2,571,210	1,140,631	503	40	110	16.8
	1948	6,449	1,750,496	1,779,955	32,618	45,857	69.6	2,939,498	1,344,355	544	21	93	14.1	
	Chicago & North Western.....	1949	8,073	886,260	912,919	30,123	25,812	65.7	1,791,589	789,847	364	23	82	17.5
	1948	8,055	963,423	1,011,274	22,826	29,408	69.3	1,946,064	896,944	376	15	95	19.5	
Central Western Region	Chicago Great Western.....	1949	1,445	176,953	179,588	13,031	8,042	65.3	537,908	231,890	48	1	21	30.4
	1948	1,445	239,679	239,754	9,714	8,386	70.7	538,378	240,306	61	1	25	29.1	
	Chic., Milw., St. P. & Pac.....	1949	10,663	1,393,087	1,466,584	57,260	41,594	63.7	2,892,976	1,300,261	496	21	69	14.7
	1948	10,663	1,507,554	1,581,133	71,376	44,046	64.4	3,054,397	1,395,146	501	24	99	15.9	
	Chic., St. P., Minn. & Omaha.....	1949	1,606	207,758	221,535	12,028	4,991	67.1	348,987	160,274	81	3	31	27.0
	1948	1,606	239,630	255,536	13,958	5,621	66.5	392,390	175,736	87	1	29	25.0	
	Duluth, Missabe & Iron Range.....	1949	575	34,610	34,865	356	558	54.2	40,743	18,113	22	12	19	35.8
	1948	569	34,399	34,882	868	504	57.7	34,227	15,485	24	9	22	40.0	
	Great Northern.....	1949	8,222	960,679	962,195	45,133	31,730	69.2	2,132,223	984,865	330	60	61	13.5
	1948	8,227	1,101,624	1,103,115	49,910	36,863	66.6	2,505,998	1,157,241	364	55	65	13.4	
	Minneap., St. P. & S. Ste. M.....	1949	4,179	377,631	388,282	9,645	10,774	65.7	716,040	329,396	118	1	15	11.3
	1948	4,180	453,317	466,696	10,318	11,729	68.3	767,448	360,595	126	1	19	13.1	
Southwestern Region	Northern Pacific.....	1949	6,593	778,278	823,728	52,047	26,060	66.6	1,817,732	851,244	333	31	55	13.1
	1948	6,613	903,229	956,925	59,607	30,656	65.4	2,179,703	1,027,040	344	22	53	12.6	
	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.).....	1949	13,103	2,490,376	2,									

Items for the Month of January 1949 Compared with January 1948

Region, road and year	Freight cars on line			Per Cent. B.O.	C.t.m. per train-hr. excl. locos. and tenders	G.t.m. per train-mi. excl. locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi. inc.	Coal lb. per 1000 g.t.m. loco.	Mi. per loco. per day			
	Home	Foreign	Total													
New Eng. Region	Boston & Maine.....	1949	2,167	7,796	9,963	3.4	35,999	2,253	959	26.6	813	43.9	5,076	16.0	95.3	
		1948	1,332	14,992	16,324	2.2	28,652	2,084	904	26.9	666	34.6	5,530	13.8	109.7	
	N. Y., N. H. & Htd.....	1949	1,925	16,773	18,698	1.7	35,227	2,416	1,075	27.2	563	29.9	6,025	14.6	77.8	
		1948	1,468	29,448	30,916	1.3	25,985	2,079	951	26.6	391	19.7	5,720	12.5	75.7	
Great Lakes Region	Delaware & Hudson.....	1949	6,038	5,735	11,773	4.3	54,217	2,917	1,512	37.1	1,195	48.9	15,744	18.7	62.2	
		1948	1,743	7,752	9,495	3.7	48,352	2,875	1,548	38.4	1,521	57.8	18,045	16.9	71.1	
	Del., Lack. & Western.....	1949	7,175	9,993	17,168	4.8	45,150	2,926	1,311	30.5	712	35.7	12,492	15.7	87.6	
		1948	3,772	13,749	17,521	3.9	36,974	2,524	1,146	29.9	696	33.5	12,373	14.9	107.0	
	Erie.....	1949	10,668	16,319	26,987	6.6	56,093	3,411	1,410	27.5	1,043	59.3	12,637	16.5	71.0	
		1948	5,661	25,167	30,828	4.6	48,322	3,127	1,356	27.6	1,022	53.3	13,842	15.6	79.3	
	Grand Trunk Western.....	1949	5,051	8,076	13,127	8.4	42,512	2,133	886	27.5	510	29.0	6,892	20.1	123.7	
		1948	3,595	11,214	14,809	5.5	34,355	1,923	838	27.5	499	25.7	7,782	18.0	137.3	
	Lehigh Valley.....	1949	10,829	8,819	19,648	12.1	55,789	2,988	1,386	32.3	610	28.8	9,866	19.0	99.2	
		1948	5,244	15,048	20,292	7.4	45,255	2,678	1,300	32.3	662	29.2	10,523	17.3	85.0	
	New York Central.....	1949	68,938	90,711	159,649	4.5	39,389	2,440	1,097	32.3	715	37.1	10,686	16.4	86.7	
		1948	47,613	132,103	179,716	2.9	33,119	2,383	1,131	32.8	683	32.1	11,069	14.1	95.1	
Central Eastern Region	New York, Chic. & St. L.....	1949	3,524	12,421	15,945	2.2	50,755	2,581	1,110	28.9	1,439	77.6	13,445	19.7	128.9	
		1948	2,272	13,345	15,617	1.8	45,441	2,390	1,075	28.6	1,580	78.8	14,351	19.2	144.9	
	Pitts. & Lake Erie.....	1949	6,026	10,332	16,358	7.1	51,431	3,361	1,964	49.5	369	11.6	28,104	15.3	73.5	
		1948	3,039	8,659	11,698	6.5	46,037	3,153	1,828	48.7	493	15.7	28,127	14.8	85.2	
	Wabash.....	1949	7,394	11,877	19,271	3.5	44,355	2,193	930	27.6	974	51.3	7,782	20.4	108.3	
		1948	4,991	15,290	20,281	2.4	42,570	2,216	999	28.3	1,038	50.0	8,809	19.4	116.0	
	Baltimore & Ohio.....	1949	53,537	36,989	90,526	7.0	35,070	2,640	1,271	36.7	832	37.5	12,393	13.5	74.7	
		1948	37,910	46,692	84,602	6.3	29,059	2,406	1,208	36.5	958	40.1	13,118	12.4	86.1	
	Central of New Jersey*.....	1949	907	8,723	9,630	6.0	38,850	2,890	1,475	39.0	335	13.8	8,299	14.0	70.4	
		1948	761	11,779	12,540	3.6	35,054	2,896	1,519	38.9	322	12.5	9,137	12.6	78.8	
	Central of Pennsylvania.....	1949	2,209	2,773	4,982	7.7	37,457	2,699	1,419	40.0	696	27.7	15,998	14.8	65.5	
		1948	714	4,413	5,127	7.3	35,925	2,866	1,584	40.2	750	26.4	17,932	13.1	72.0	
Southern Region	Chicago & Eastern Ill.....	1949	2,215	3,141	5,356	7.9	39,874	2,376	1,164	33.5	998	44.9	5,761	16.9	71.7	
		1948	1,687	4,465	6,152	3.9	35,451	2,070	1,056	34.2	1,033	42.6	6,719	17.5	90.0	
	Elgin, Joliet & Eastern.....	1949	6,658	10,929	17,587	1.9	18,197	2,851	1,540	41.8	262	9.7	20,046	6.7	107.5	
		1948	5,845	13,432	19,277	2.0	12,356	2,300	1,234	41.1	249	9.1	12,095	5.8	120.9	
	Pennsylvania System.....	1949	139,806	96,514	236,320	8.6	39,487	2,813	1,320	34.9	601	28.9	14,427	14.5	77.9	
		1948	112,311	130,227	242,538	9.6	33,014	2,597	1,271	34.4	623	27.4	14,881	13.2	78.6	
	Reading.....	1949	15,040	18,607	33,647	5.4	36,993	2,931	1,555	43.1	634	24.4	15,735	12.6	73.9	
		1948	8,437	25,638	34,125	3.3	33,081	2,720	1,538	44.8	690	23.2	17,668	12.2	82.1	
	Western Maryland.....	1949	6,298	2,963	9,261	1.4	42,181	3,168	1,728	45.6	1,219	44.2	12,954	13.5	57.0	
		1948	2,873	4,931	7,804	.9	28,973	2,816	1,570	47.5	1,597	54.4	14,470	10.5	69.1	
	Poca-hontas Region	Chesapeake & Ohio.....	1949	56,024	21,325	77,349	5.7	54,832	3,496	1,912	46.8	1,177	44.5	18,296	15.9	80.8
			1948	42,711	24,671	67,382	1.9	50,574	3,376	1,952	48.2	1,550	54.2	22,020	15.2	98.4
Norfolk & Western.....		1949	35,066	6,327	41,393	5.3	65,423	4,005	2,170	48.0	1,227	44.7	24,684	16.5	93.9	
		1948	26,003	7,969	33,972	1.2	58,792	3,902	2,186	49.5	1,665	56.5	29,317	15.4	115.5	
Northwestern Region	Atlantic Coast Line.....	1949	11,172	17,497	28,669	3.4	30,178	1,804	786	30.4	855	46.2	4,342	16.8	72.2	
		1948	8,666	21,817	30,483	4.2	27,030	1,759	805	30.4	892	44.5	4,787	16.1	87.8	
	Central of Georgia.....	1949	2,921	5,772	8,693	7.5	30,110	1,663	792	31.5	873	38.7	4,132	18.2	91.6	
		1948	1,802	6,315	8,117	4.3	29,169	1,645	793	31.4	909	39.9	4,325	17.8	102.0	
	Gulf, Mobile & Ohio.....	1949	3,931	10,567	14,498	1.9	54,999	2,955	1,453	31.9	1,080	45.9	5,364	18.7	90.1	
		1948	2,554	12,566	15,120	1.7	51,529	2,776	1,386	32.2	1,086	45.1	6,063	18.6	92.3	
	Illinois Central.....	1949	22,995	30,927	53,922	2.4	43,208	2,441	1,150	33.5	999	47.6	7,982	17.9	77.9	
		1948	15,711	37,038	52,749	1.4	39,756	2,401	1,149	33.5	1,134	52.3	9,051	16.9	88.8	
	Louisville & Nashville.....	1949	36,490	14,494	50,984	3.8	39,134	1,876	963	37.7	841	35.5	8,874	16.1	105.0	
		1948	26,289	18,696	44,985	3.4	26,222	1,807	956	38.4	1,095	43.8	10,482	14.5	125.3	
	Nash., Chatt. & St. Louis.....	1949	1,554	4,341	5,895	4.4	34,690	1,665	785	29.7	941	42.4	5,632	20.9	107.7	
		1948	1,485	5,803	7,288	5.4	26,754	1,406	693	30.4	899	38.1	6,473	19.1	110.1	
Southern Region	Seaboard Air Line.....	1949	9,083	14,929	24,012	1.0	38,019	2,178	959	31.6	1,053	52.8	5,867	17.9	97.9	
		1948	61,134	16,372	77,506	1.5	32,756	1,957	887	30.8	1,088	52.3	6,016	17.2	104.0	
	Southern.....	1949	15,842	28,831	44,673	3.5	32,068	1,849	820	29.1	819	42.5	5,766	17.5	75.7	
		1948	12,302	32,652	44,954	3.7	28,155	1,699	777	29.3	965	47.3	6,724	16.8	94.2	
	Chicago & North Western.....	1949	22,249	30,688	52,937	2.9	30,851	2,129	939	30.6	491	24.4	3,156	15.3	70.8	
		1948	17,179	35,866	53,045	3.4	29,939	2,118	967	30.5	547	25.9	3,592	14.3	75.3	
	Chicago Great Western.....	1949	1,816	5,892	7,708	3.7	47,098	3,042	1,311	28.8	1,071	56.9	5,177	15.5	94.5	
		1948	1,022	4,730	5,752	3.5	35,725	2,249	1,004	28.7	1,363	67.3	5,365	15.9	99.6	
	Chic., Milw., St. P. & Pac.....	1949	29,059	31,892	60,951	1.6	31,707	2,100	944	31.3	673	33.8	3,934	15.3	88.5	
		1948	20,063	50,184	70,247	2.0	29,472	2,052	937	31.7	649	31.8	4,221	14.5	92.8	
	Chic., St. P., Minn. & Omaha.....	1949	1,355	7,158	8,513	4.4	22,878	1,746	802	32.1	630	29.2	3,219	13.6	70.9	
		1948	736	8,459	9,195	4.9	21,139	1,693	758	31.3	632	30.4	3,530	12.9	82.9	
Northwestern Region	Duluth, Missabe & Iron Range.....	1949	14,531	634	15,165	4.1	16,350	1,226	545	32.5	39	2.2	1,016	13.9	25.5	
		1948	14,324	467	14,791	2.6	13,049	1,043	472	30.7	33	1.9	878	13.1	25.0	
	Great Northern.....	1949	24,651	16,644	41,295	3.5	34,337	2,236	1,033	31.0	746	34.7	3,864	15.5	76.2	
		1948	18,802	25,400	44,202	2.7	35,406	2,296	1,060	31.4	829	39.7	4,532	15.6	82.9	
	Minneap., St. P. & S. Ste. M.....	1949	6,415	8,533	14,948	5.9	33,797	1,914	881	30.6	694	34.5	2,543			

UNION PACIFIC RAILROAD COMPANY

FIFTY-SECOND ANNUAL REPORT — YEAR ENDED DECEMBER 31, 1948.

TO THE STOCKHOLDERS OF UNION PACIFIC RAILROAD COMPANY:

The Board of Directors submits the following report for the year ended December 31, 1948, for Union Pacific Railroad Company, including Oregon Short Line Railroad Company, Oregon-Washington Railroad & Navigation Company, Los Angeles & Salt Lake Railroad Company and The St. Joseph and Grand Island Railway Company, whose properties are leased to Union Pacific Railroad Company. The lessor companies have certain income and charges, and the figures in the Income Account, other than those relating to transportation operations, and in the Surplus Account and General Balance Sheet and tabulations and tables relating thereto are stated on a consolidated basis, *excluding offsetting accounts between companies.*

INCOME.

	1948.	1947.	INCREASE.	DECREASE.
Transportation Operations.				
Operating revenues.....	\$437,583,131.76	\$410,053,704.83	\$27,529,426.93	
Operating expenses.....	321,403,215.52	300,454,623.61	20,948,591.91	
Revenues over expenses.....	\$116,179,916.24	\$109,599,081.22	\$6,580,835.02	
Taxes.....	59,998,483.29	58,431,619.97	1,566,863.32	
Railway Operating Income.				
Rents from use of joint tracks, yards, and terminal facilities.....	\$56,181,432.95	\$51,167,461.25	\$5,013,971.70	
	1,847,718.31	1,845,195.27	2,523.04	
	\$58,029,151.26	\$53,012,656.52	\$5,016,494.74	
Hire of equipment—debit balance.....	\$12,767,594.14	\$12,920,785.80		\$153,191.66
Rents for use of joint tracks, yards, and terminal facilities.....	3,285,924.75	3,334,639.51		48,714.76
	\$16,053,518.89	\$16,255,425.31		\$201,906.42
Net Income from Transportation Operations.....	\$41,975,632.37	\$36,757,231.21	\$5,218,401.16	
Income from Investments and Sources other than Transportation Operations.				
Income from oil and gas operations—net†.....	\$26,540,409.12	\$16,957,217.95	\$9,583,191.17	
Dividends on stocks owned.....	2,711,350.50	2,343,818.00	367,532.50	
Interest on bonds and notes owned.....	2,124,657.19	2,273,337.40		\$148,680.21
Other interest income.....	139,616.35	140,205.89		589.54
Rents from lease of road and equipment.....	255,503.73	279,527.54		24,023.81
Miscellaneous rents.....	513,938.07	512,984.35	953.72	
Miscellaneous income.....	54,333.13	3,528,178.27		3,473,845.14
Total.....	\$32,339,808.09	\$26,035,269.40	\$6,304,538.69	
Total Income.....	\$74,315,440.46	\$62,792,500.61	\$11,522,939.85	
Fixed and Other Charges.				
Interest on funded debt.....	\$5,946,176.08	\$7,487,770.82		\$1,541,594.74
Interest on unfunded debt.....	382,331.18	368,404.78	\$13,926.40	
Miscellaneous rents.....	27,884.11	28,928.43		1,044.32
Miscellaneous charges.....	669,456.30	459,901.03	209,555.27	
Total.....	\$7,025,847.67	\$8,345,005.06		\$1,319,157.39
Net Income from All Sources.....	\$67,289,592.79	\$54,447,495.55	\$12,842,097.24	
Released from "Reserve against possible refunds on U. S. Government shipments".....	164,730.97	1,547,973.23		\$1,383,242.26
Total for Disposition.....	\$67,454,323.76	\$55,995,468.78	\$11,458,854.98	

DISPOSITION.

Dividends on Stock of Union Pacific Railroad Co.:

Preferred Stock:				
2 per cent paid April 1, 1948.....	\$1,990,862.00			
2 per cent paid October 1, 1948.....	1,990,862.00	\$3,981,724.00	\$3,981,724.00	
Common stock:				
2½ per cent paid April 1, 1948.....	\$5,557,275.00			
2½ per cent paid July 1, 1948.....	5,557,275.00			
2½ per cent paid October 1, 1948.....	5,557,275.00			
4½ per cent payable January 3, 1949.....	10,003,095.00	26,674,920.00	22,229,100.00	\$4,445,820.00
Total Dividends.....	\$30,656,644.00	\$26,210,824.00	\$4,445,820.00	
Transferred to Earned Surplus—Unappropriated.....	\$36,797,679.76	\$29,784,644.78	\$7,013,034.98	

† Excludes Federal income taxes.

Operating results for year 1948 compared with year 1947:

	1948.	1947.	INCREASE.	DECREASE.	PER CENT.
Average miles of road operated.....	9,751.91	9,772.88		20.97	.2
OPERATING REVENUES					
Freight.....	\$359,724,653.06	\$330,468,521.09	\$29,256,131.97		8.9
Passenger.....	42,369,214.94	46,412,313.47		\$4,043,098.53	8.7
Mail.....	12,501,509.49	10,261,533.72	2,239,975.77		21.8
Express.....	5,735,702.67	5,635,676.10	100,026.57		1.8
Other passenger-train.....	7,149,236.34	7,121,572.81	27,663.53		.4
Switching.....	3,652,444.78	3,303,997.27	348,447.51		10.5
Other.....	6,450,370.48	6,850,090.37		399,719.89	5.8
Total operating revenues.....	\$437,583,131.76	\$410,053,704.83	\$27,529,426.93		6.7
OPERATING EXPENSES					
*Maintenance of way and structures.....	\$60,680,925.70	\$53,128,675.48	\$7,552,250.22		14.2
*Maintenance of equipment.....	72,865,946.49	69,181,744.75	3,684,201.74		5.3
Total maintenance.....	\$133,546,872.19	\$122,310,420.23	\$11,236,451.96		9.2
Traffic.....	9,333,131.80	8,486,055.96	847,075.84		10.0
Transportation.....	154,397,878.83	146,741,603.94	7,656,274.89		5.2

[Advertisement]

	1948.	1947.	INCREASE.	DECREASE.	PER CENT.
Miscellaneous operations.....	13,112,488.13	13,130,293.97	.....	\$17,805.84	.1
General.....	11,012,844.57	9,786,249.51	1,226,595.06	.....	12.5
Total operating expenses.....	\$321,403,215.52	\$300,454,623.61	\$20,948,591.91	.....	7.0
Revenues over expenses.....	\$116,179,916.24	\$109,599,081.22	\$6,580,835.02	.....	6.0
TAXES					
State and county.....	\$14,971,732.00	\$13,885,835.00	\$1,085,897.00	.....	7.8
Federal income.....	\$34,840,293.00	\$30,449,589.61	\$4,390,703.39	.....	14.4
Federal unemployment insurance.....	801,145.21	4,802,208.64	.....	\$4,001,063.43	83.3
Federal retirement.....	9,302,092.38	9,169,136.76	132,955.62	.....	1.5
Other federal.....	83,220.70	124,849.96	.....	41,629.26	33.3
Total federal.....	\$45,026,751.29	\$44,545,784.97	\$480,966.32	.....	1.1
Total taxes.....	\$59,998,483.29	\$58,431,619.97	\$1,566,863.32	.....	2.7
Railway operating income.....	\$56,181,432.95	\$51,167,461.25	\$5,013,971.70	.....	9.8
Equipment rents (debit).....	12,767,594.14	12,920,785.80	.....	\$153,191.66	1.2
Joint facility rents (debit).....	1,438,206.44	1,489,444.24	.....	51,237.80	3.4
Net railway operating income.....	\$41,975,632.37	\$36,757,231.21	\$5,218,401.16	.....	14.2
Per cent—Operating expenses of operating revenues.....	73.45	73.27	.18	.....	.2
FREIGHT TRAFFIC (Commercial freight only)					
Tons of revenue freight carried.....	52,156,787	56,420,476	.....	4,263,689	7.6
Ton-miles, revenue freight.....	29,167,846,419	31,738,920,871	.....	2,571,074,452	8.1
Average distance hauled per ton (miles).....	559.23	562.54	.....	3.31	.6
Average revenue per ton-mile (cents).....	1.233	1.041	.192	.....	18.4
Average revenue per freight-train mile.....	\$12.93	\$10.34	\$2.59	.....	25.0

PASSENGER TRAFFIC					
Revenue passengers carried.....	2,624,444	2,999,793	.....	375,349	12.5
Revenue passengers carried one mile.....	1,774,949,510	2,116,424,457	.....	341,474,947	16.1
Average distance hauled per passenger (miles).....	676.31	705.52	.....	29.21	4.1
Average passenger per passenger-train mile.....	109.10	129.07	.....	19.97	15.5
Average revenue per passenger-mile (cents).....	2.387	2.193	.194	.....	8.8
Average revenue per passenger-train mile, passengers only.....	\$2.60	\$2.83	.....	\$ .23	8.1
Average total revenue per passenger-train mile.....	\$3.79	\$3.81	.....	\$ .02	.5
* Include depreciation, amortization and retirement charges:					
Maintenance of way and structures.....	\$6,460,560.90	\$5,930,611.85	\$529,949.05		
Maintenance of equipment.....	12,456,540.92	10,253,350.73	2,203,190.19		

† 1947 figures restated to include motor-car trains.

Expenditures chargeable to investment in Road and Equipment Property:

Additions and Betterments (excluding equipment).....	\$17,587,124.95
Equipment.....	47,114,870.06
Total expenditures.....	\$64,701,995.01
Credits to investment in Road and Equipment Property:	
Cost of road property retired and not replaced.....	\$ 3,809,889.93
Cost of equipment retired.....	11,126,314.15
Total Credits.....	\$14,936,204.08
Net increase in investment in "Road and Equipment Property".....	\$49,765,790.93

General Balance Sheet—Assets.

	December 31, 1948.	December 31, 1947.	INCREASE.	DECREASE.
Investments:				
Road and Equipment.....	\$1,160,143,725.23	\$1,110,377,934.30	\$49,765,790.93	
Less:				
Receipts from improvement and equipment fund.....	\$23,823,091.13	\$23,823,091.13		
Appropriations from income and surplus prior to July 1, 1907, credited to this account.....	13,310,236.52	13,310,236.52		
Total.....	\$37,133,327.65	\$37,133,327.65		
Road and equipment property.....	\$1,123,010,397.58	\$1,073,244,606.65	\$49,765,790.93	
DONATIONS AND GRANTS (Credit).....	\$12,139,823.29	\$11,098,756.59	\$1,041,066.70	
RESERVE FOR DEPRECIATION—ROAD AND EQUIPMENT (Credit).....	\$177,300,386.33	\$173,878,433.87	\$3,421,952.46	
RESERVE FOR AMORTIZATION OF NATIONAL DEFENSE PROJECTS (Credit).....	\$58,481,517.12	\$57,803,237.17	\$678,279.95	
SINKING FUNDS.....	\$307.50	\$222.50	\$85.00	
CAPITAL AND OTHER RESERVE FUNDS.....	\$9,078.55	\$143,773.28		\$134,694.73
MISCELLANEOUS PHYSICAL PROPERTY.....	\$31,827,411.94	\$28,427,836.23	\$3,399,575.71	
RESERVE FOR DEPRECIATION—MISCELLANEOUS PHYSICAL PROPERTY (Credit).....	\$15,467,041.65	\$14,172,864.54	\$1,294,177.11	
Investments in affiliated companies:				
Stocks.....	\$20,308,013.24	\$20,304,013.24	\$4,000.00	
Notes.....	321,402.14	329,594.43		\$8,192.29
Advances.....	8,463,608.98	8,491,049.55		27,440.57
Total.....	\$29,093,024.36	\$29,124,657.22		\$31,632.86
Investments in other companies:				
Stocks.....	\$64,048,872.42	\$64,048,872.42		
Bonds and notes.....	23,055,404.79	22,797,809.23	\$257,595.56	
Total.....	\$87,104,277.21	\$86,846,681.65	\$257,595.56	
RESERVE FOR ADJUSTMENT OF INVESTMENTS IN SECURITIES (Credit).....	\$33,842,953.87	\$33,942,953.87		
Total Investments.....	\$973,812,774.88	\$926,091,531.49	\$47,721,243.39	

	December 31, 1948.	December 31, 1947.	INCREASE.	DECREASE.
Current Assets:				
CASH.....	\$32,917,114.72	\$43,312,877.48		\$10,395,760.76
TEMPORARY CASH INVESTMENTS (U. S. Government securities).....	86,640,024.00	96,302,249.82		9,662,225.82
SPECIAL DEPOSITS.....	397,085.82	605,496.84		208,411.02
LOANS AND BILLS RECEIVABLE.....	524,339.48	789,140.00		264,800.52
TRAFFIC AND CAR-SERVICE BALANCES—NET.....	10,324,099.16	11,272,427.22		948,328.06
NET BALANCE RECEIVABLE FROM AGENTS AND CONDUCTORS.....	3,992,815.99	4,343,868.03		351,052.04
MISCELLANEOUS ACCOUNTS RECEIVABLE.....	16,362,179.64	16,791,552.92		429,373.28
MATERIAL AND SUPPLIES.....	41,592,665.99	35,940,295.93	\$5,652,370.06	
INTEREST AND DIVIDENDS RECEIVABLE.....	548,227.83	1,030,301.84		482,074.01
ACCRUED ACCOUNTS RECEIVABLE.....	12,111,549.30	12,529,733.69		418,184.39
OTHER CURRENT ASSETS:				
Baltimore and Ohio Railroad Co. capital stock applicable to pay- ment of extra dividend of 1914.....	105,841.30	106,897.30		1,056.00
Miscellaneous items.....	2,983,909.32	1,023,344.83	1,960,564.49	
Total Current Assets.....	\$208,499,854.55	\$224,048,185.90		\$15,548,331.35
Deferred Assets:				
WORKING FUND ADVANCES.....	\$115,177.50	\$108,634.79	\$6,542.71	
OTHER DEFERRED ASSETS.....	3,396,700.14	3,499,086.48		\$102,386.34
Total Deferred Assets.....	\$3,511,877.64	\$3,607,721.27		\$95,843.63
Unadjusted Debits:				
PREPAYMENTS.....	\$2,001.36	\$2,622.00		\$620.64
OTHER UNADJUSTED DEBITS.....	1,578,542.32	1,490,011.17	\$88,531.15	
Total Unadjusted Debits.....	\$1,580,543.68	\$1,492,633.17	\$87,910.51	
Grand Total.....	\$1,187,405,050.75	\$1,155,240,071.83	\$32,164,978.92	

General Balance Sheet—Liabilities.

	December 31, 1948.	December 31, 1947.	INCREASE.	DECREASE.
Capital Stock				
Common stock.....	\$222,302,500.00	\$222,302,500.00		
Preferred stock.....	99,591,580.79	99,591,580.79		
Total Capital Stock.....	\$321,894,080.79	\$321,894,080.79		
Funded Debt	237,508,750.44	240,710,232.09		\$3,201,481.65
Total Capital Stock and Funded Debt.....	\$559,402,831.23	\$562,604,312.88		\$3,201,481.65
Due to Affiliated Companies	\$7,208,328.55	\$11,180,098.87		\$3,971,770.32
Current Liabilities:				
AUDITED ACCOUNTS AND WAGES PAYABLE.....	\$23,938,299.50	\$24,826,364.65		\$888,065.15
MISCELLANEOUS ACCOUNTS PAYABLE.....	4,555,979.87	4,931,811.00		375,831.13
INTEREST MATURED UNPAID:				
Coupons matured, but not presented.....	313,456.40	492,197.20		178,740.80
Coupons due first proximo.....	88,450.00	104,277.50		15,827.50
DIVIDENDS MATURED UNPAID:				
Dividends due but uncalled for.....	270,250.67	293,038.31		22,787.64
Extra dividend on common stock declared January 8, 1914, payable to stockholders of record March 2, 1914, unpaid.....	114,161.44	115,338.34		1,176.90
Dividend on common stock payable third proximo.....	10,003,095.00	12,226,005.00		2,222,910.00
UNMATURED INTEREST ACCRUED.....	1,650,605.70	1,671,471.96		20,866.26
ACCRUED ACCOUNTS PAYABLE.....	10,618,702.91	7,590,046.69	\$3,028,656.22	
TAXES ACCRUED.....	54,070,355.14	50,075,242.78	3,995,112.36	
OTHER CURRENT LIABILITIES.....	3,323,120.50	4,696,491.98		1,373,371.48
Total Current Liabilities.....	\$108,946,477.13	\$107,022,285.41	\$1,924,191.72	
Deferred Liabilities	\$7,974,486.55	\$8,041,593.42		\$67,106.87
Unadjusted Credits:				
PREMIUM ON FUNDED DEBT.....	\$4,700,655.68	\$4,923,914.91		\$223,259.23
RESERVE FOR FIRE INSURANCE.....	16,810,283.38	15,838,605.05	\$971,678.33	
RESERVE FOR DEPRECIATION—LEASED PROPERTY.....	5,899.53	5,050.57	848.96	
OTHER UNADJUSTED CREDITS.....	3,840,833.60	3,828,051.39	12,782.21	
Total Unadjusted Credits.....	\$25,357,672.19	\$24,595,621.92	\$762,050.27	
Total Liabilities	\$708,889,795.65	\$713,443,912.50		\$4,554,116.85
Surplus:				
UNEARNED SURPLUS.....	\$270,677.72	†\$48,444.97	\$222,232.75	
EARNED SURPLUS—APPROPRIATED:				
Additions and betterments.....	\$28,522,352.23	\$28,522,352.23		
Funded debt retired through income and surplus.....	5,526,341.16	4,323,822.41	\$1,202,518.75	
Sinking fund reserves.....	307.50	222.50	85.00	
Reserve against possible refunds on U. S. Government shipments.....	2,029,442.01	2,194,172.98		\$164,730.97
Total Earned Surplus—Appropriated.....	\$36,078,442.90	\$35,040,570.12	\$1,037,872.78	
Earned Surplus—Unappropriated	\$402,581,587.24	†\$367,122,597.00	\$35,458,990.24	
Total Earned Surplus.....	\$438,660,030.14	†\$402,163,167.12	\$36,496,863.02	
Total Surplus.....	\$438,930,707.86	\$402,211,612.09	\$36,719,095.77	

As this consolidated balance sheet excludes all intercompany items, securities of the Los Angeles & Salt Lake Railroad Company and The St. Joseph and Grand Island Railway Company owned by other System companies are not included. The difference between the par and face value of such securities as carried on the books of the issuing companies (less unextinguished discount on the bonds and discount charged to Earned Surplus—Unappropriated but added back in consolidating the accounts) and the amounts at which the securities are carried on the books of the owning companies is set up here to balance.....

\$39,584,547.24 \$39,584,547.24

† Restated. Grand Total..... \$1,187,405,050.75 \$1,155,240,071.83 \$32,164,978.92